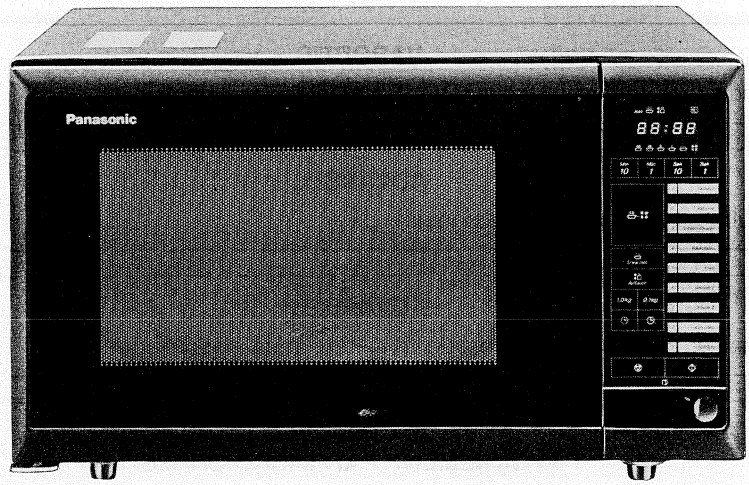
ORDER NO. CAD90080322C2

Service Manual

Microwave Oven

NN-5200B, NN-5250B
NN-5400B, NN-5450B
NN-5500B, NN-5550B
NN-5800B, NN-5850B



Specifications

Power Source :	220 V AC Single Phase, 50 Hz
Power Requirement :	1,420W
High Frequency Output :	850W (IEC-705)
Microwave Frequency :	2,450 MHz
Timer :	99 min. 99 sec.···Touch control models 30 min.·····Mechanical timer model
Outside Dimensions :	510 mm (W) × 360 mm (D) × 306 mm (H)
Oven Cavity Dimensions :	330 mm (W) × 330 mm (D) × 200 mm (H)
Weight :	15 kg
Specifications subject to change without notice.	

Panasonic

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.
EPG·····For Continental Europe
WPG·····For Switzerland
UPG·····For France

WARNING

This products should be serviced only by trained, qualified personnel.

VARNING

Denna apparat skall repareras endast av härför kvalificerad personal.

VAROITUS

Laitetta saa huoltaa ainoastaan tehtävään koulutettu, ammattitaitoinen huoltomies.

ADVARSEL

Reparasjoner må kun utføres av kvalifisert personell.

ADVARSEL

Disse produkter må kun repareres af kvalificerede teknikere med specialuddannelse.

ATTENTION
RAYONNEMENT PAR MICRO-ONDES

LES PERSONNES NE DOIVENT PAS ÊTRE EXPOSÉES A L'ÉNERGIE PAR MICRO-ONDES QUI PEUT PAYONNER DU MAGNÉTRON OU D'UN AUTRE DISPOSITIF GÉNÉRATEUR DE MICRO-ONDES EN CAS D'UTILISATION OU DE CONNEXION INCORRECTES. TOUTES LES CONNEXIONS A MICRO-ONDES D'ENTRÉE ET DE SORTIE. LES GUIDES D'ONDES. FLASQUES ET JOINTS DOIVENT ÊTRE SÛRS. NE JAMAIS FAIRE FONCTIONNER LE GÉNÉRATEUR SANS UNE CHARGE PRÉVUE POUR ABSORBER L'ENERGIE PAR MICRO-ONDES. NE JAMAIS REGARDER A L'INTÉRIEUR D'UN GUIDE D'ONDES OUVERT OU UNE ANTENNE PENDANT QUE LE GÉNÉRATEUR EST EN FONCTION.

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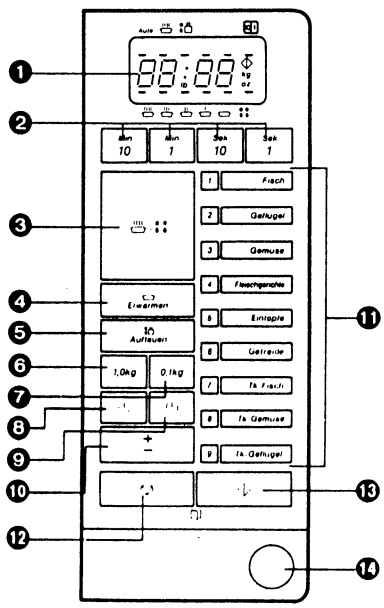
FEATURE CHART

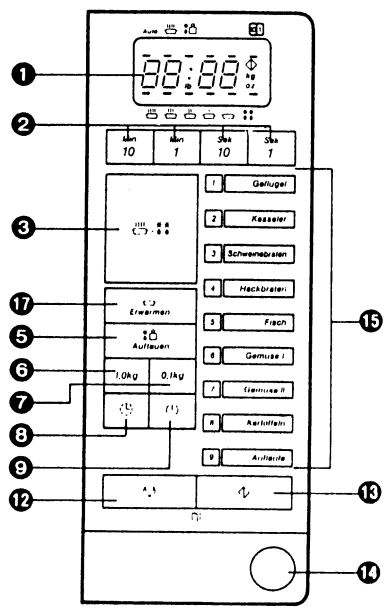
MODEL / FEATURE	NN-5800 NN-5850	NN-5500 NN-5550	NN-5400 NN-5450	NN-5200 NN-5250
CYCLIC DEFROST	○	○	○	—
2-STAGE COOKING	○	○	○	—
3-STAGE COOKING	○	○	—	—
AUTO SENSOR COOK	○	—	—	—
AUTO WEIGHT DEFROST	○	○	○	—
AUTO WEIGHT COOK	—	○	—	—
AUTO REHEAT	—	○	○	—
AUTO START	○	○	○	—
STEP BY STEP DISPLAY	○	○	—	—
DELAY/STAND	○	○	○	—
DIGITAL CLOCK	○	○	○	—
MECHANICAL TIMER	—	—	—	○
MECHANICAL VARI-POWER	—	—	—	○

CONTROL PANEL

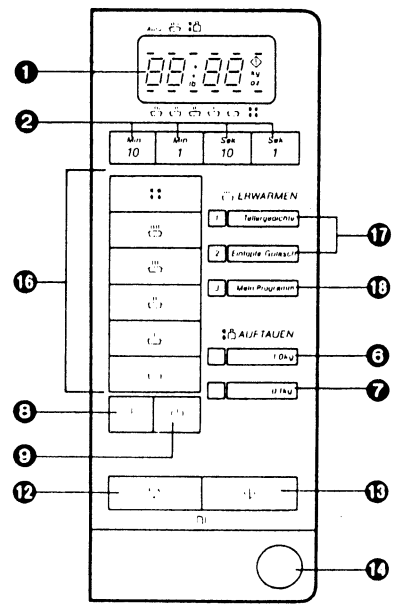
NN-5850/NN-5800



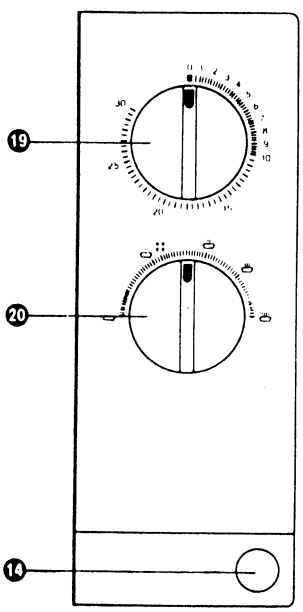
NN-5550/NN-5500



NN-5450/NN-5400



NN-5250/NN-5200



*Controls with Auto Count-Up Feature

❶Display Window
❷Time Pads*
❸Power Pads*
❹Sensor Reheat Pad
❺Auto Weight Defrost Pad
❻1.0kg Pads*
❼0.1kg Pads*
❽Deley/Stand Pad
❾Clock Pad
❿Adjust to Taste Pad
⓫Auto Sensor Cook Pads
⓬Stop/Cancel Pad
⓭Start Pad
⓮Door Release Button
⓯Auto Reheat Pad
⓰Weight Cook Pads
⓱Power Pads
⓲Your Recipe Pad
⓳Timer Select Control
⓴Power Select Control

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

1. To Set Clock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	88:88
2. Tap [Clock] pad.	
3. Enter time of day (TOD) by tapping appropriate [Number] pads.	11:25
4. Tap [Clock] pad. TOD has now been registered into the digital programmer circuit and will count up by minutes.	11:25

2. Time Cooking For Two Stage (NN-5800B/5850B/5500B/5550B)

OPERATION	DISPLAY
1. Place a water load in the oven.	
2. Tap [Power] pad once for High power. (1st stage)	
3. Set for 5 seconds by tapping [Number] pad.	5
4. Tap [Power] pad 3 times for Medium power. (2nd stage)	
5. Set for 10 seconds by tapping [Number] pad.	10
6. Tap [Start] pad.	5
7. When first stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	10
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	

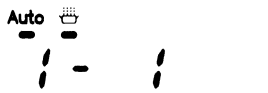
3. Time Cooking For Two Stage (NN-5400B/5450B)

OPERATION	DISPLAY
1. Place a water load in the oven.	
2. Tap [High] pad.	
3. Set for 5 seconds by tapping [Number] pad.	5
4. Tap [Medium] pad.	
5. Set for 10 seconds by tapping [Number] pad.	10
6. Tap [Start] pad.	5
7. When first stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	10
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	

4. Auto Weight Defrost

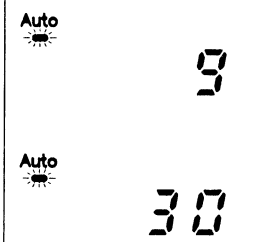
OPERATION	DISPLAY
1. Tap [Auto Defrost] Pad for NN-5800B/5850B only.	
2. Set the weight for 1 kg by tapping [1.0 kg] pad.	
3. Tap [Start] Pad. For UPG models·····30 min.	
5. Tap [Stop/Reset] pad twice Oven shuts off.	TOD reappears in the display window.

5. Auto Reheat

OPERATION	DISPLAY
1. Tap [1. Reheat] Pad once.	
2. Tap [Start] Pad. For UPG models·····5 min.	
3. When cooking time has elapsed. • Oven beeps five times and shuts off.	• TOD reappears in the display window.

6. Auto Sensor Cooking

NOTE: Make sure that the outer panel is installed before Auto Sensor Cooking Test, since Auto Sensor function does not operate properly without the outer panel.

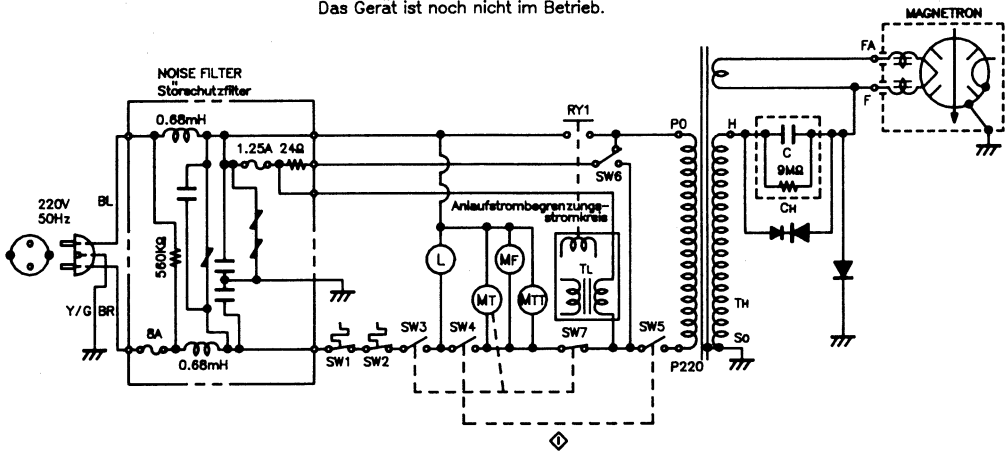
OPERATION	DISPLAY
1. Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a beaker, place the beaker in the center of the oven.	
2. Tap Auto Sensor Cook [1 Fish] Pad once.	
3. Tap [Start] Pad.	
4. The steam sensor detects steam about 1 minute 30 seconds to 5 minutes after the Start Pad is tapped. Auto Sensor Cooking (T1) automatically switches to time cooking (T2). "1" disappears with beep sounds and the remainder of cooking time appears in display window. NOTE: Cooking time will vary depending on the water temperature, the shape of beaker or the power source voltage.	 NOTE: If 9 to 30 (9 seconds to 30 seconds) appears, AUTO SENSOR FUNCTION is normal.
5. When the balance of cooking time has elapsed, oven stops and beeps five times.	• TOD reappears in the display window.

For UPG model:
If 54 Seconds to 3 minutes appears, Auto Sensor function is normal.

SCHEMATIC DIAGRAM (Mechanical timer model)

NOTE: Door is closed.
Unit is not operated.

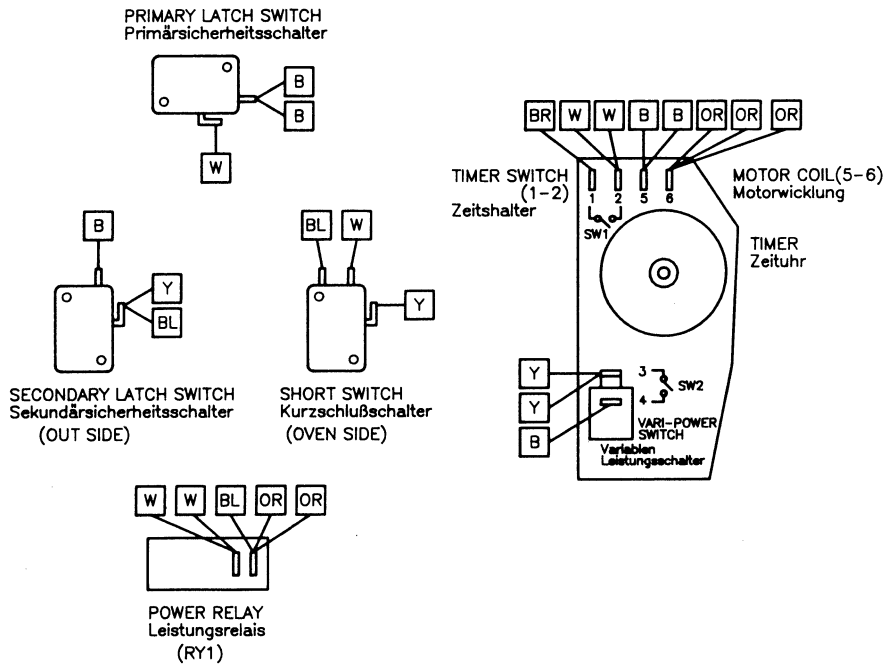
Anmerkung: Die Tür wird geschlossen.
Das Gerät ist noch nicht im Betrieb.



SW1	THERMAL CUTOUT (MAG) Thermoschalter (Magnetron)
SW2	THERMAL CUTOUT (OVEN) Thermoschalter (Garraum)
SW3	TIMER SWITCH Zeitschalter
SW4	PRIMARY LATCH SWITCH Primärsicherheitsschalter
SW5	SECONDARY LATCH SWITCH Sekundärsicherheitsschalter
SW6	SHORT SWITCH Kurzschlußschalter
SW7	VARI-POWER SWITCH Variablen Leistungsschalter
	GROUNDING Erdung
	CHASSIS GROUND Chassis Erdung
	FUSE Sicherung
MF	FAN MOTOR Ventilatormotor
CH	HIGH VOLTAGE CAPACITOR Hochspannungskondensator
	DIODE Diode
TH	HIGH VOLTAGE TRANSFORMER Hochspannungstransformator
	PROTECTOR DIODE Sicherungsdiode
L	OVEN LAMP Garraumlampe
MTT	TURNTABLE MOTOR Drehtellermotor
MT	TIMER MOTOR Zeituhrmotor
TL	LOW VOLTAGE TRANSFORMER Niederspannungstransformator
RY1	POWER RELAY Leistungsrelais

NOTE: When replacing, check the lead wire colour as shown.

Anmerkung: Beim Auswechseln, die Farbe des Verbindungskabels beachten.



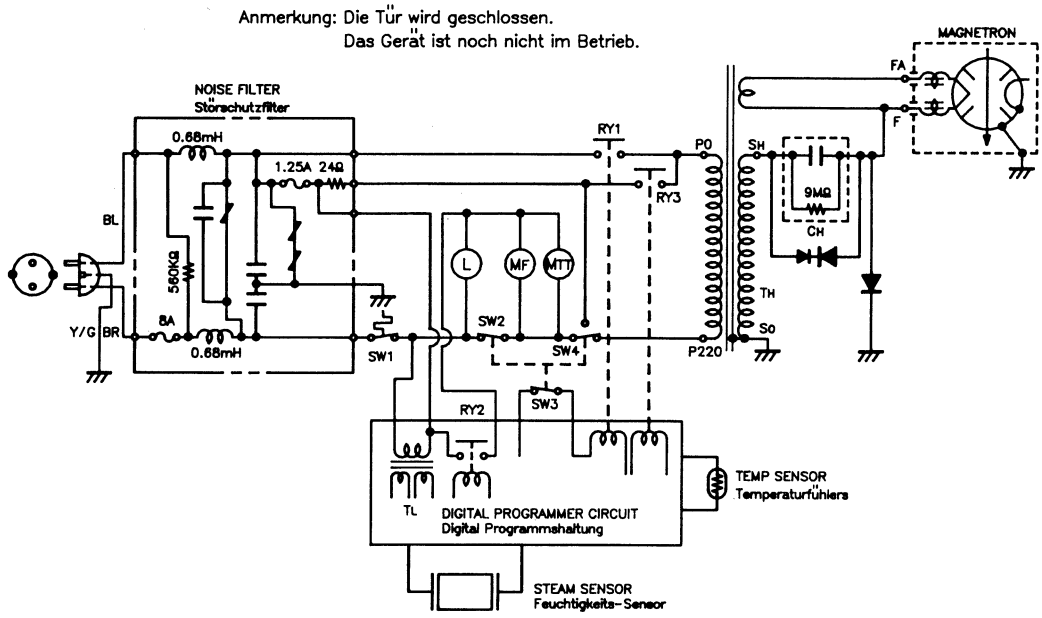
65-003

Fig. 1

SCHEMATIC DIAGRAM (Touch control models)

NOTE: Door is closed.
Unit is not operated.

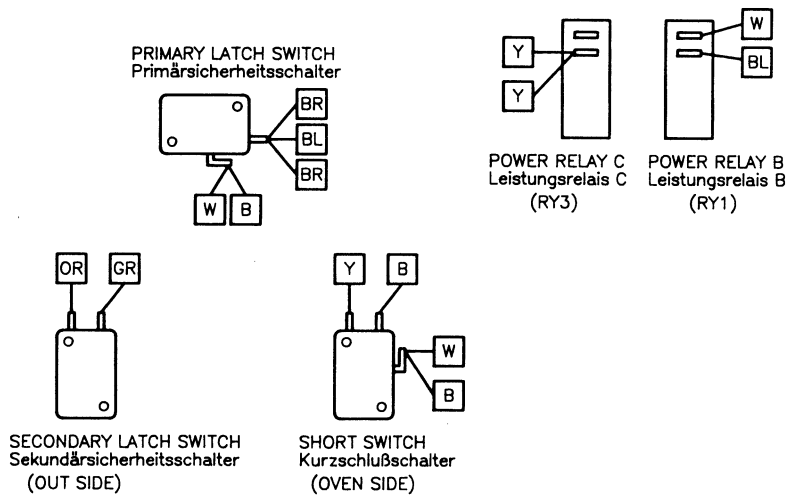
Anmerkung: Die Tür wird geschlossen.
Das Gerät ist noch nicht im Betrieb.



SW1	THERMAL CUTOUT (MAG) Thermoschalter (Magnetron)
SW2	PRIMARY LATCH SWITCH Primärsicherheitsschalter
SW3	SECONDARY LATCH SWITCH Sekundärsicherheitsschalter
SW4	SHORT SWITCH Kurzschlußschalter
	GROUNDING Erdung
	CHASSIS GROUND Chassis Erdung
	FUSE Sicherung
MF	FAN MOTOR Ventilatormotor
CH	HIGH VOLTAGE CAPACITOR Hochspannungskondensator
	DIODE Diode
TH	HIGH VOLTAGE TRANSFORMER Hochspannungstransformator
	VARISTOR Varistor
TL	LOW VOLTAGE TRANSFORMER Niederspannungstransformator
	PROTECTOR DIODE Sicherungsdiode
L	OVEN LAMP Garraumlampe
MTT	TURNTABLE MOTOR Drehtellermotor
RY1	POWER RELAY B Leistungsrelais B
RY2	POWER RELAY A Leistungsrelais A
RY3	POWER RELAY C Leistungsrelais C

NOTE: When replacing, check the lead wire colour as shown.

Anmerkung: Beim Auswechseln, die Farbe des Verbindungskabels beachten.



65-002

Fig. 2

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control (Mechanical timer model)

The vari-power controller controls the ON-OFF time of the vari-power switch to vary the output power of the microwave oven from "warm" to "high". The vari-power controller is a part of the timer assembly. The timer assembly consists of timer motor, timer switch, vari-power switch and the combination of gears, cam and actuater lever.

One complete cycle of the vari-power controller is 26.4 seconds, in which the vari-power switch is turned "on" or "off" by the cam rotation in the 26.4 ± 2 second period.

By controlling the timing of the vari-power switch "on" period, the 220V AC supplied to the high voltage transformer is interrupted intermittently so that the average output power of the microwave oven is varied. **Table** shows the timing chart of vari-power switch operation in respect to the power setting on the control panel.

NOTE: **The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.**

2. Variable power cooking control (Touch control models)

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Warm" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds.

The relation between indications on the control panel and the output of the microwave oven is as shown in **Table.**

NOTE: **The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.**

3. Cyclic defrost (Touch control models)

When defrost power and defrosting time is selected and Start pad is touched:

(A) The digital programmer circuit (DPC) divides the total defrosting time into 8 equal periods, consisting of four defrosting periods, each followed by a standing period.

(B) During defrosting power periods, power relay B is energized for 9 seconds and de-energized for 13 seconds by DPC.

(C) During Standing periods, power relay B is always open resulting in no microwave power.

NOTE: **Defrost time selected is converted into seconds by the DPC but display will show selected time in minutes and seconds as programmed. The total number of seconds is divided into 8 time periods. The remainder (seconds not equally divisible by 8) are added to the last standing time period.**

Example : If Defrosting time is selected for 5 minutes, each operating period will be as follows : (See **Figure.**)

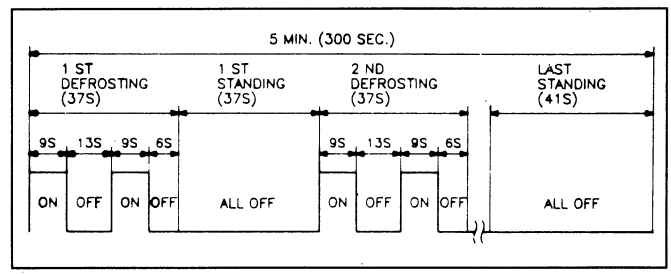
5 minutes = 300 seconds

300/8 = 37 and remainder is 4 seconds.

The 4 seconds is added to the last time period.

NOTE: **When defrosting time is selected for not more than 7 seconds, the power relay B will not be energized at all.**

POWER SETTING	OUTPUT POWER(W) APPROX.	ON-OFF TIME OF VARI-POWER SWITCH (Mechanical timer model)		ON-OFF TIME OF POWER RELAY B (Touch control models)	
		ON (SEC)	OFF (SEC)	ON (SEC)	OFF (SEC)
HIGH	850	26.4	0	22	0
MEDIUM	600	22.6	3.8	17	5
LOW	440	17.8	8.6	13	9
DEFROST	270	13	13.4	——	——
SIMMER	250	10.6	15.8	8	14
WARM	100	4.6	21.8	4	18
CYCLIC DEFROST	APPROX. 270W	——	——	Please refer to description of cyclic defrost	



4. Auto defrost, Auto reheat Auto weight cook control

When those Auto Control feature is selected and the Start Pad is tapped:
(A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window.
Table shows the corresponding cooking times for respective serving by categories.
(B) When cooking time in the display window has elapsed, the oven turns off automatically by a controll signal from the digital programmer circuit.

Auto Defrost (For EPG, SPG, WPG and YPG models)

WEIGHT SELECTED	TOTAL DEFROSTING TIME
1 kg	35 min. 00 sec.

Auto Defrost (For UPG models)

WEIGHT SELECTED	TOTAL DEFROSTING TIME
1 kg	30 min. 00 sec.

Auto Reheat (NN-5400/5450) (For EPG, SPG, WPG and YPG models)

CATEGORY	SERVING	COOKING TIME
Reheat 1	1	3 min. 00 sec.

5. Auto sensor cooking

Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.
All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As a food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult Variable Power Microwave Cookbook for procedures.

Explanation of the Auto Sensor Cooking process

1) During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 seconds is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
2) **T1 time**·····The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
3) **T2 time**·····When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

Balance of cooking time (T2 time)

The balance of cooking time which is called T2 time, can be calculated by the following formula.

T2 time (in sec.) =T1 time × K factor

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varies resulting in T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Poultry:

T2 = T1 × K
= 2 min. and 40 sec. × 0.1
= 160 sec. × 0.1
= 16 sec.
= 16 sec.

Auto Reheat (NN-5400/5450) (For UPG models)

CATEGORY	SERVING	COOKING TIME
Reheat 1	1	5 min. 00 sec.

Auto Reheat (NN-5500/5550) (For EPG, SPG, WPG and YPG models)

WEIGHT SELECTED	TOTAL TIME
1 kg	10 min. 00 sec.

Auto Reheat (NN-5500/5550) (For UPG models)

CATEGORY	SERVING	COOKING TIME
Reheat	1	1 min. 30 sec.

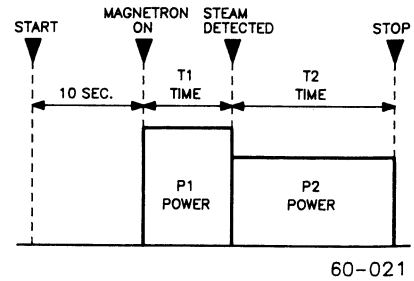
Auto Weight Cook (NN-5500/5550) (For EPG, SPG, WPG and YPG models)

CATEGORY	WEIGHT SELECTED	TOTAL COOKING TIME
1	1 kg	15 min. 30 sec.

Auto Weight Cook (NN-5500/5550) (For UPG models)

CATEGORY	WEIGHT SELECTED	TOTAL COOKING TIME
1	1 kg	22 min. 00 sec.

AUTO SENSOR COOKING/REHEAT PROCESS



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Auto Sensor Cook

CATEGORY	P1 Power	P2 Power	K factor Standard
1. Fish	HIGH	WARM	0.1
Auto Sensor Cook(For UPG models)			
4	HIGH	HIGH	0.1

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high voltage, high current equipment.
Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the earthing

Do not operate on a 2 wire extension cord. The microwave oven is designed to be used in a completely earthed condition. It is imperative, therefore, to make sure it is properly earthed before beginning repair work.

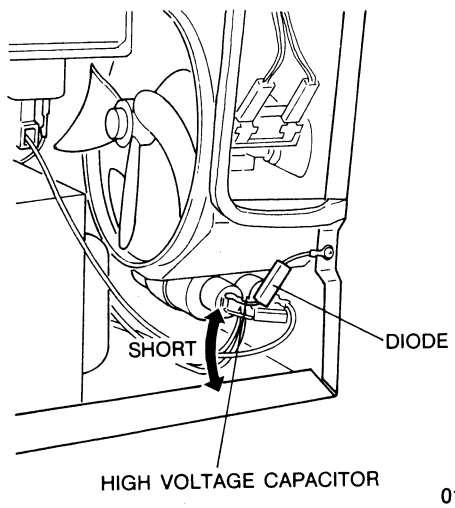
2. If the door lock, the door switch, the door seal or the door develops a malfunction, be sure not to operate the oven until complete repairs are made.

If the oven is operated with any of these parts in imperfect condition, hazardous microwave leakage might occur.

WARNING
Never operate the oven until the following are confirmed:
(A) The door is tightly closed.
(B) There is no broken hinge or door arm.
(C) The door seal is not damaged.
(D) The door is not bent or warped.
(E) There is no other visible damage.

3. Warning about the electric charge in the high voltage capacitor.

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet, wait 30 seconds and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated jumper lead wire or an insulated handle screwdriver to discharge.



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Touch chassis side first then short to the high voltage capacitor terminal.

Important Note
1. High voltage above 250 volts are existing on following parts during operation.
   *Magnetron
   *High Voltage Transformer
   *High Voltage Diode
   *High Voltage Capacitor
   Unusual attention should be paid during repair or troubleshooting of product.
2. If the microwave oven is operated with incorrect installed door hinge or magnetron, it can cause microwave leakage of over 5mW/cm^2.
   Hence it is absolutely necessary to check if magnetron and door hinge are correctly and safely installed after repairs or replacement.

WARNING
Never touch any circuit wiring with your hand nor with an insulated tool during operation.

4. When parts must be replaced, always remove the power plug from the outlet, and discharge the high voltage capacitor.

5. Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwave might leak if screws are not properly tightened.
(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

6. Avoid inserting nails, wire, etc. through holes in unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

7.

CAUTION
MICROWAVE RADIATION
Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating device if it is improperly used or connected all input and output microwave connections waveguides, flanges, and gasket must be secure. Never operate the device without a microwave energy absorbing load attached. Never look into an open waveguide or antenna while the device is energized.

8.

CAUTION
High voltage parts may become uncovered when outer cabinet is removed.

SÄKERHETSÅTGÄRDER ATT TAGA HÄNSYN TILL VID FELSÖKNING OCH REPARATION

Till skillnad fran andra apparater har mikrovågsugnar högspänningstarkströmsutrustning.
Även om ugnen är helt säker vid normalt bruk, skall största försiktighet vidtagas vid reparation.

VARNING
Vid reparation i närheten, eller vid byte av magnetron, skall armbandsur avtagas.

1. Kontroll av jordning.

Använd ej en 2-ledad anslutningssladd. Mikrovågsugnen är tillverkad så att den skall användas jordad. Tillse därföratt ugnen är ordentligt jordad innan arbetet påbörjas.

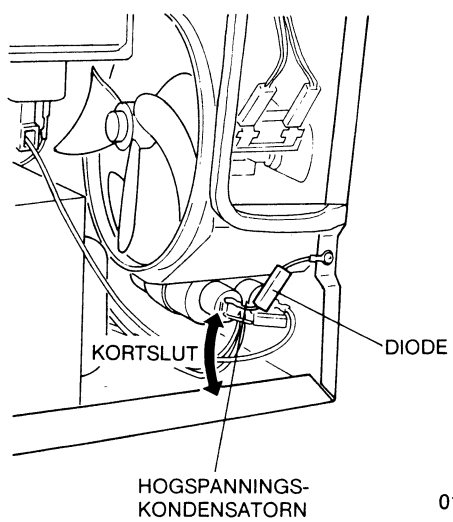
2. Om dörrlåset, dörromkopplaren eller dörrtillslutningen visar någon felaktighet, använd ej ugnen innan felet är avhjälpt.

Om ugnen används när något av dessa fel har uppstått kan ev. Mikrovågsläckage uppstå.

VARNING
Sätt aldrig på ugnen innan följande har kontrollerats:
(A) Dörren är ordentligt stängd.
(B) Dörrtätningslisten inte är skadad.
(C) Dörren är skev, böjd eller otät.
(D) Gångjärnen är hela.
(E) Att annan synlig skada inte finns.

3. Varning för elektrisk ström I högspänningskondensatorn

CA: 30 sekunder efter det att ugnen stängts av, kvarstår en elektrisk laddning I högspänningskondensatorn. Vid utbyte eller kontroll av delar, stäng av ugnen, vänta I 30 sekunder och kortslut därefter kondensatorn (Anslutningen för ledning från dioden) till ytter höljets jord genom att använda en isolerad kortslutningskabel.



Kontrollera att kortslutningskabeln är jordad till chassit innan högspänningskondensatorn kortslutes

VIKTIGT
1. Under drift finns spänning överstigande 250V i apparaten på följande ställen:
   *Magnetronen
   *Högspänningstransformatorn
   *Högspänningsdioden
   *Högspänningskondensatorn
   Stor försiktighet skall iakttagas under felsökning och reparation.
2. Om ugnen används med felaktigt installerad dörr och/eller magnetron kan mikrovågsläckage överstigande 5mW/cm² uppträda. Följaktligen är det absolut nödvändigt att kontrollera att dörr och/eller magnetron är korrekt och säkert installerade efter utbyte eller reparation.

VARNING
Gör inga mätningar i högspänningsdelen eller av glödspänning för magnetronen.

4. Vid byte av delar, tag alltid ur nätkontakten från vägguttaget och urladda högspänningskondensatorerna.

5. Kontroll efter reparation.

(A) Efter reparation eller vid byte av delar tillse att skruvar, flänsar och tätningar ej fattas eller ä lösa. Mikrovågor kan läcka ut om detta ej åtgärdats.
(B) Alla elektriska kopplingar skall < ara väl förbundna innan nätkontakten anslutes.

6. Stoppa aldrig in någon form av metallföremål i håligheter eller springor under det att apparaten är påslagen.

Metallföremål kan fungera som antenn och förorsaka mikrovågs läckage.

7.

VARNING
för
MIKROVÅGSSTRÅLNING.
Mikrovågsenergi kan stråla från magnetronen eller från annan mikrovågsgenererande anordning om den används eller ansluts felaktigt. Alla anslutningar för mikrovåg, såsom flänsar och tätningar måste vara betryggande ur säkerhetssynpunkt. Starta aldrig anorningen utan mikrovågsabsorberande belastning. Mikrovågsstrålning från en öppen vågledare eller antenn har sådan strålningstäthet att uppenbar skaderisk föreligger.

8.

VARNING
Vid avlägsnande av apparatens ytterhölje friläggs högspänningsföerande delar.

LAITTEEN HUOLLOSSA JA KORJAUKSESSA HUOMIOONOTETTAVIA VAROTOIMENPITEITÄ

Toisin kuin monet muut kotitalouskoneet toimii mikroaaltouuni suurella käyttöjännitteellä ja-virrala.
Vaikkakin uuni on täysin turvallinen normaalikäytössä, on sen korjauksessa noudatettava ehdottomasti varotoimenpiteitä.

VAROITUS
Magnetronia vaihdettaessa tai sen läheisyydessä työskenneltäessä tulee rannekello irroittaa.

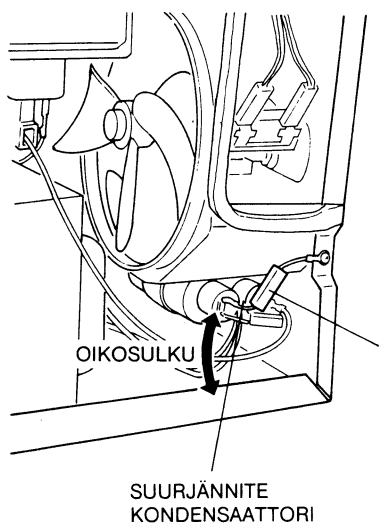
1. Jos uunin oven lukkoon, sen kytkimeen tai tiivisteisiin tai itse oveen tulee jokin vika, ei uunia saa käyttää ennenkuin vika on korjattu.

Jos uunia käytetään oven tai sen jonkin osan ollessa vioittunut, saattaa tapahtua vaarallista mikroaaltovuotoa.

VAROITUS
Ennen uunin käynnistämistä on aina ensin tarkistettava että:
(A) Uunin ovi on suljettu kunnolla.
(B) Oven tiivistyslistat eivät ole vahingoittuneet.
(C) Ovi ei ole vino, vääntynyt tai epätiivis.
(D) Oven saranat ovat ehjät.
(E) Ettei uuni ole mitenkään näkyvästi vaurioitunut

2. Huom! Sähkö varautuu korkeajännitekondensaattoriin.

Kun uuni on kytketty OFF-asentoon jää sähkövaraus korkeajännitekondensaattoriin noin 30:neksi sekunniksi. Kun asennat tai tarkistat uunin osia kytke uuni OFF-asentoon, odota 30 sekuntia ja oikosulje korkeajännitekondensaattorin kosketin (Diodin liitosjohtimen pääte) kojeiston runkoa vasten eristetyllä "hyppylangalla".



Varmistakaa että hyppylanka on maadoitettu laitteen rungon sivuun ennen suurjännite kondensaattorin päätteen oikosulkemista

Tärkeä varoitus
1. Laitteen toimiessa seuraavissa osissa on yli 250 V suurjännite.
   *Magnetroni
   *Suurjännitemuuntaja
   *Suurjännitediodi
   *Suurjännitekondensaattori
   Laitteen korjaamisessa täytyy siksi olla erityisen varovainen.
2. Uunin väärin asennettu luukku tai magnetroni voi aiheuttaa mikroaaltovuotoa, joka ylittää 5 mW/cm². Tämän vuoksi korjauksen ja osien vaihdon jälkeen on ehdottomasti tarkastettava magnetronin ja uuniluukun oikea asennus.

VAROITUS
Magnetronin hehkujännitettä tai sen suurjänniteosan jännitettä ei saa mitata.

3. Kun laitteeseen vaihdetaan osia on virtajohdin aina irroitettava seinästä ja korkeajännitekondensaattorien jännite purettava.

4. Tarkistukset korjaustöiden jälkeen.

(A) Korjauksen tai osien vaihdon jälkeen on tarkistettava että kaikki ruuvit, laipat ja tiivisteet ovat paikallaan ja kiristettyinä. Mikroaallot saattavat vuotaa löysistä liitoksista.
(B) Kaikki sähköiset liitännät on suoritettava ennen virran kytkemistä.

5. Uunin kotelon reikiin tai aukkoihin ei saa työntää mitään metalliesineitä uunin ollessa käytössä.

Metalliesineet voivat toimia antenneina ja aiheuttaa mikroaaltovuotoa.

6.

MIKROAALTOSÄTEILYÄ
Käyttäjä ei saa joutua alttiiksi mikroaaltoenergialle, jota voi säteillä magnetronista tai muusta mikroaaltoja kehittävästä laitteesta, jos sitä käytetään väärin tai jos se kytketään väärin. Kaikkien mikroaaltoliitäntöjen sekä syöttö-että ulostulopuolella, aaltoputkien laippojen ja tiivisteiden tulee olla varmistettuja. Mikroaaltouunia ei koskaan saa käyttää ilman kuormaa jossa mikroaaltoenergiaa kuluu. Avoimeen aaltoputkeen tai antenniin ei koskaan saa katsoa virran ollessa kytkettynä.

7.

VAROITUS
Irroitettaessa uunin kotelo paljastuu osia joissa on korkea jännite.

SIKKERHETSTILTAK SOM MÅ TAS HENSYN TIL VED FEILSØKING OG REPARASJON

I motsetning til annet kjøkkenutstyr har mikrobølgeovnen høyspenning, sterkstrømsutstyr. Selvom ovnen er helt sikker ved normal bruk, må man være spesielt forsiktig ved reparasjon.

ADVARSEL

Ved reparasjon i nærheten, eller ved bytte av magnetron skal armbåndsur tas av.

1. Kontroll av jording.

Bpuk ikke 2-lederkabel, mikrobølgeovnen er laget slik at den skal jordes. Pass derfor på at ovnen er skikkelig jordet før arbeidet påbegynnes.

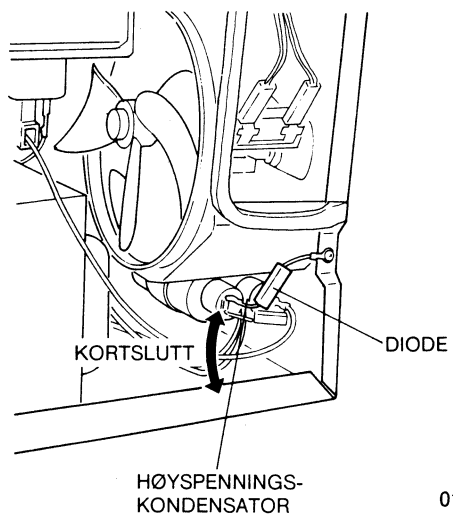
2. Om det finnes feil på dørlås, dørbryter eller dørtetning må ikke ovnen brukes før feilen er rettet. I motsatt fall kan mikrobølgelekkasje oppstå.

ADVARSEL

Bruk aldri ovnen før følgende er kontrollert:
A. Døren er ordentlig stengt.
B. Dørtetningslisten ikke er skadet.
C. Døren er skjev, bøyd eller utett.
D. Gangjernene er hele.
E. At det ikke er annen synlig skade.

3. Advarsel vedrørende elektrisk ladning i høyspenning kondensatoren.

Ca. 30 sekunder etter at ovnen er slått av, vil det fortsatt være igjen en elektrisk ladning i høyspenning kondensatoren. Ved kontroll eller skifting av deler, slå av ovnen, vent 30 sekunder og kortslutt høyspenning kondensatoren (Sammenkoblingspunkt for ledning fra dioden) til chassis med en isolert ledning som vist på **Fig. 15.**



Vaer sikker på att kortslutningskabeln er jordet til chassis før kortsluttning av høyspenningskondensatoren

Advarsel

1. Høyspenning over 250 volt finnes på følgende deler under drift:
   *Magnetron
   *Høyspenningstransformator
   *Høyspenningslikeretter
   *Høyspenningskondensator
   Vær spesielt oppmerksom under arbeid med disse delene.
2. Hvis mikrobølgeovnen blir brukt med feil montert dørhengsler eller magnetron, kan dette forårsake lekkasje av mikrobølgestråling på mer enn 5mW/cm². Derfor er det absolutt påkrevet å kontrollere at dørhengsler og magnetron er korrekt montert etter reparasjon eller utskifting.

ADVARSEL

Foreta aldri målinger i høyspenningsdelen eller glødespenningen for magnetronen.

4. Ved utskifting av deler, fjern alltid støpslet fra kontakten og kortslutt høyspenningskondensatorene.

5. Kontroller etter reparasjon:

(A) At skruer, flenser og tetninger ikke mangler eller er løse. Mikrobølger kan ellers lekke ut.
(B) At alle elektriske koblinger er iorden før kontakten settes i.

6. Putt aldri metallgjenstander inn i hull eller sprekker mens ovnen er tilkoblet.

Slike kan virke som antenne og forårsake mikrobølgelekkasje.

7.

ADVARSEL MOT MIKROBØLGESTRALING

Personer må aldri utsettes for stråling av mikrobølgeenergi. Alle tilkoblinger for mikrobølger, som flenser og tetninger må være sikkerhetsmessig betryggende utført. Start aldri apparatet uten mikrobølgeabsorberende belastning. Mikrobølgestråling fra åpen bølgeleder eller antenne har så stor strålingstetthet at det er stor risiko for skadevirkninger.

8.

ADVARSEL

Når ytterdekslet fjernes blir høyspenningsførende deler tilgjengelige.

SIKKERHEDSFORSKRIFTER VED FEJLFINDING OG REPARATION

I modsætning til mange andre elektriske apparater arbejder mikrobølgeovne ved høje spændinger og store strømme.
Selv om en mikrobølgeovn er fuldstændig sikker ved normal brug, skal reparation foretages med højeste forsigtighed.

ADVARSEL

Tag Deres armbåndsur af, hvis De skal arbejde i nærheden af eller udskifte magnetronen.

1. Kontrol af jordforbindelse

Tilslut ikke ovnen ved hjælp af et 2-leder kabel. Mikrobølgeovnen er konstrueret til at arbejde med jordforbindelse. Se derfor efter at ovnen er forsvarligt jordet, før reparationen påbegyndes.

2. Hvis der er fejl ved låsen til ovndøren, omskifteren for døren eller tætningen af døren, må ovnen ikke anvendes, før fejlen er afhjulpet.

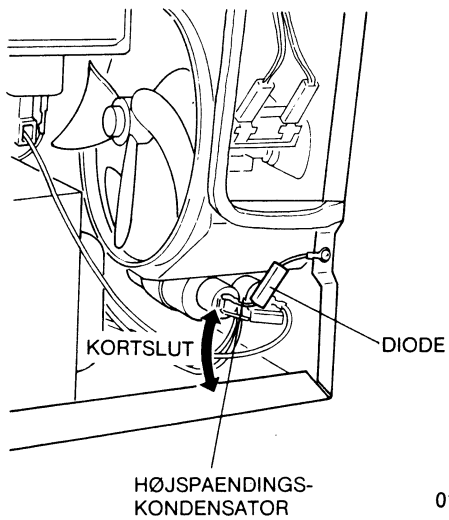
Hvis ovnen bruges, uden at sådanne fejl er afhjulpet, er der risiko for udstråling af mikrobølger.

ADVARSEL

Tænd aldrig for ovnen, før De har kontrolleret, at
(A) Døren er forsvarligt lukket,
(B) Tætningslisten omkring døren ikke er beskadiget,
(C) Ovndøren ikke er skæv, bøjet eller utæt,
(D) Hængslerne er hele, og
(E) Der ikke findes andre synlige beskadigelser.

3. Advarsel om opladning af højspændingskondensatoren

Indtil omkring 30 sekunder efter at ovnen er afbrudt, vil højspændingskondensatoren stadig være opladet. Afbryd ovnen, når De skal udskifte eller kontrollere komponenter, vent 30 sekunder og kortslut højspændingskondensatorens ene tilslutning (Tilslutning for ledning fra dioden) til chassiset med et isoleret stykke ledning.



01-003

Kortslutningstråden skal vaere stelforbundet før højspaendingskondensatoren kortsluttes

VIGTIGT

1) Følgende komponenter bærer højspænding (over 250 volt) under drift:
*Magnetron
*Højspændingstransformator
*Højspændingsensretter
*Højspændingskondensator
Extra opmærksomhed bør udvises ved reparation/fejlfinding.
2) Såfremt ovnen betjenes med forket monteret dørhængsel eller magnetron, vil der være risiko for mikrobølgelækage over 5mW/cm².
Det er derfor bydende nødvendigt at kontrollere disse komponenter efter endt reparation/udskiftning.

ADVARSEL

Undgå at berøre kredsløbene, hverken med hånden eller med isoleret værktøj, mens ovnen er i gang.

4. Hvis det er nødvendigt at udskifte komponenter, skal De altid fjerne netstikket fra stikkontakten og aflade højspændingskondensatorerne.

5. Kontrol efter reparation

(A) Efter reparation eller udskiftning af komponenter må De se efter, at alle skruer og tætningslister er på plads og fastspændt.
Der kan opstå lækage af mikrobølger, hvis skruerne ikke er forsvarligt strammet.
(B) Alle elektriske forbindelser skal være i orden, før De sætter netstikket i stikkontakten.

6. Sæt under ingen omstændigheder metalgenstande i åbninger på apparatet, mens det er i gang.

Metalgenstande kan virke som antenner og forårsage lækage af mikrobølger.

7.

FORSIGTIG
MIKROBØLGEUDSTRÅLING

Personer må ikke udsættes for mikrobølgeenergi, som kan udstråles fra magnetronen eller anden mikrobølgegenerator, hvis den er forkert anvendt eller forbundet. Alle mikrobølgeforbindelser, bølgeledere, flanger og pakninger skal være sikre. Tilslut aldrig apparatet uden en belastning, som kan absorbere mikrobølgeenergi. Se aldrig ind I en åben bølgeleder eller antenne, mens apparatet er I gang. Mikrobølgestrålingen fra en åben bølgeleder eller antenne har så stor intensitet, at der er overhængende risiko for skader.

8.

ADVARSEL

Når apparatets kabinet aftages, bliver der adgang til dele med højspænding.

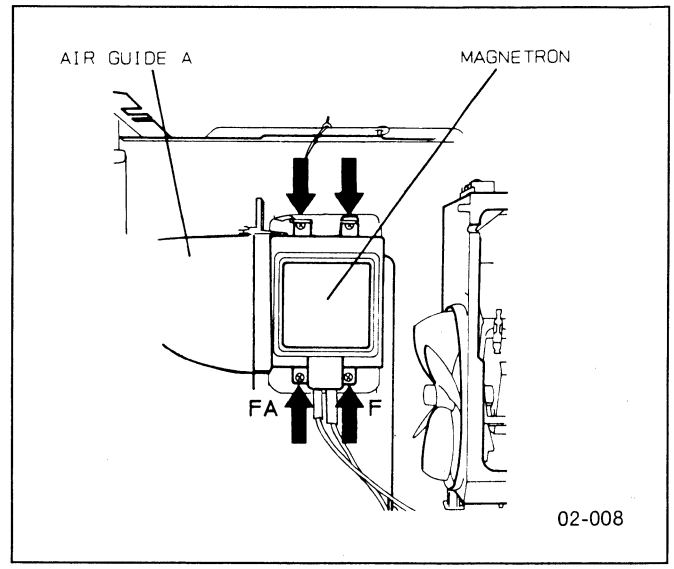
DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Magnetron

(A) Discharge the high voltage capacitor.
(B) Remove 2 screws holding magnetron thermal cutout.
(C) Remove 1 screw holding air guide A.
(D) Disconnect 2 high voltage lead wires from magnetron filament terminals.
(E) Remove 4 screws holding the magnetron.
NOTE: After replacement of the magnetron, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION
When replacing the magnetron, be sure the antenna gasket is in place.

CAUTION
When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "FA terminal" and the lead wire from high voltage capacitor should be connected to "F terminal".

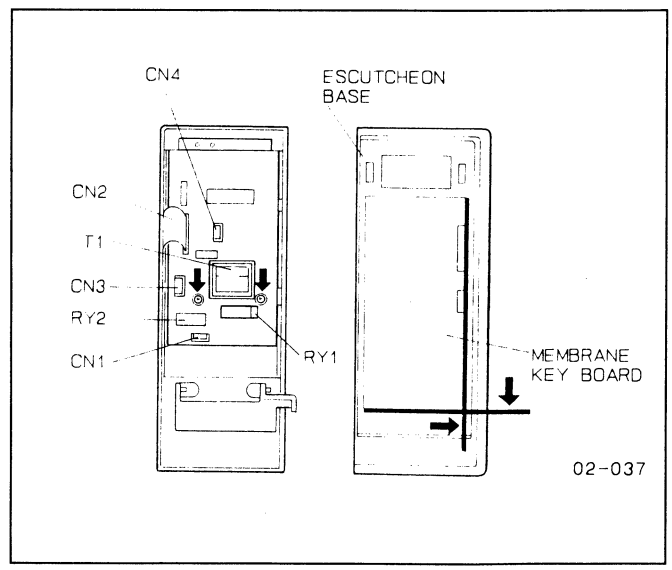


2. Digital programmer circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body, before handling the DPC.
(A) Disconnect all connectors from D.P.C.
(B) Remove 2 screws holding escutcheon base and slide the escutcheon base upward slightly.
(C) Release CN2 connector's lock of DPC by pushing both levers to inside and pull them upward, and remove flat cable of membrane key board.
(D) Remove 2 screws holding DPC.

To replace membrane key board

(E) Remove escutcheon bracket from escutcheon base by freeing 4 catch hooks on the escutcheon base.
(F) Peel off the tub of membrane key board from escutcheon base.
(G) Peel off display filter from escutcheon base.
(H) Push the upper part of key board (display window portion) from back of escutcheon base and peel off membrane key board completely from escutcheon base.
NOTE 1. The membrane key board is attached to the escutcheon base with double faced adhesive tape.
2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Make sure that new membrane key board is aligned to the right and lower edges of the escutcheon base. (see figure)

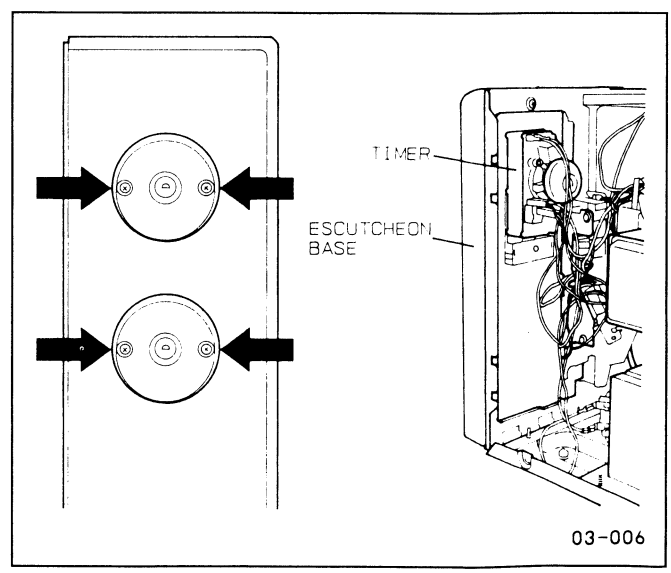


3. Timer (Mechanical timer model)

(A) Disconnect all lead wires from timer.
(B) Remove 2 knobs and remove 4 screws holding the timer.

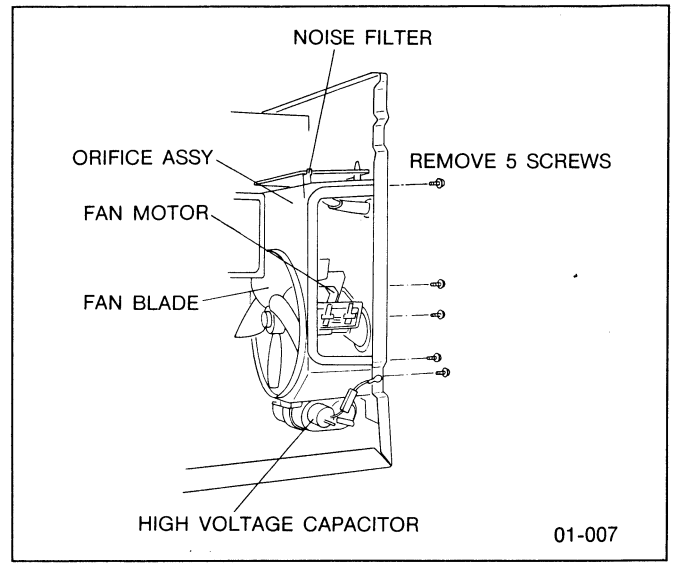
4. Low voltage transformer and/or power relays

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.
(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



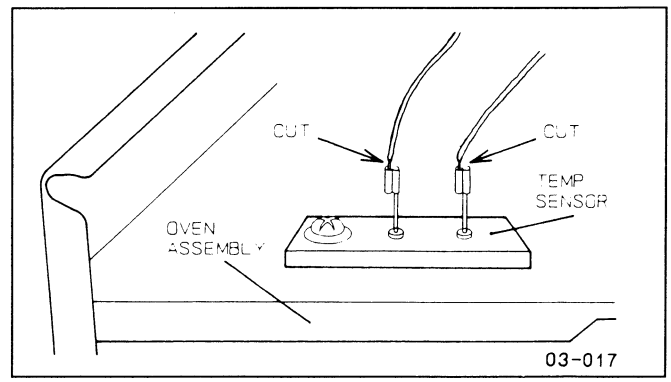
4. Fan motor.

(A) Disconnect 2 lead wires from fan motor terminals.
(B) Remove noise filter from orifice assy by freeing catch hooks.
(C) Disconnect 4 high voltage lead wires from high voltage capacitor terminals.
(D) Remove 5 screws holding fan motor and orifice assy and detach the orifice assy with fan motor from oven assy.
(E) Remove fan blade from the fan motor shaft by pulling it straight out.
(F) Separate the fan motor from the orifice assy by freeing 2 catch hooks on the orifice assy.



5. Temp sensor (thermal protector)

(A) Cut 2 lead wires at the top of sensor terminals.
(B) Remove 1 screw holding the temp sensor and replace with new one.
(C) Solder the lead wires securely to the sensor terminals.

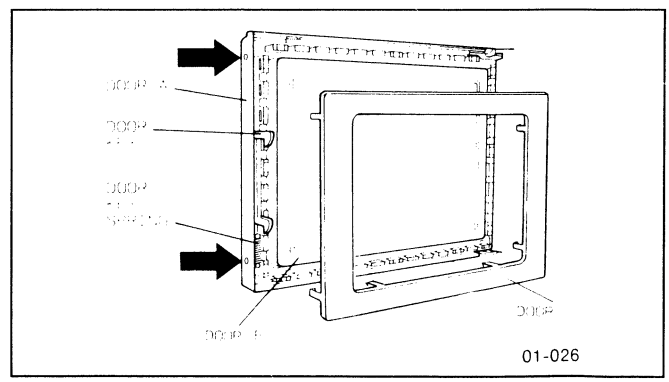


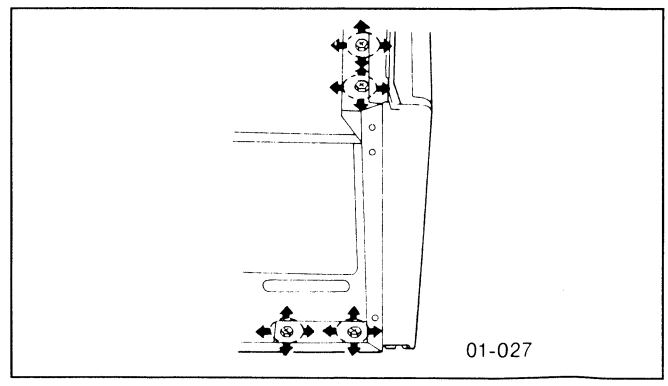
6. Door assembly

(A) Open the door and remove door C from door E by carefully pulling outward starting from upper right hand corner.
(B) Remove door key and door key spring.
(C) Remove 2 screws holding side frames of door A.
(D) Separate the door A from the door E by freeing catch hooks on the door A using a flat screwdriver.

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent an excessive microwave leakage.

(1) When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
(2) Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave may leak from the clearance between the door and oven.
(3) Perform the microwave leakage test.





7. Turntable motor

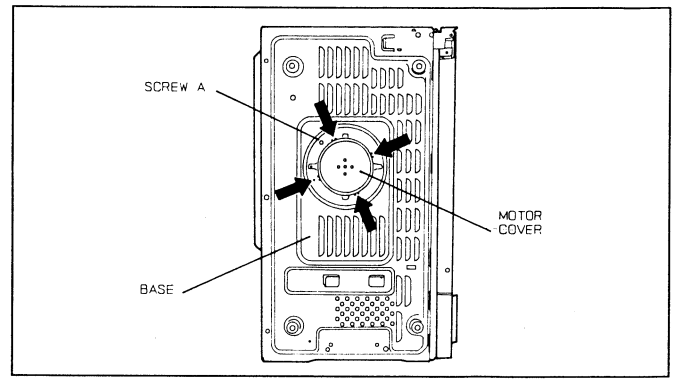
(A) Remove the motor cover by breaking off at the 4 spots indicated by arrows with a cutter or the like. (See Figure)

NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.

(B) Disconnect 2 lead wires connected to the turntable motor.

(C) Remove the turntable motor by removing 2 screws.

NOTE: To reinstall the motor cover, use 4×6 screw.



8. Steam sensor

(A) Remove 1 screw holding steam sensor unit.

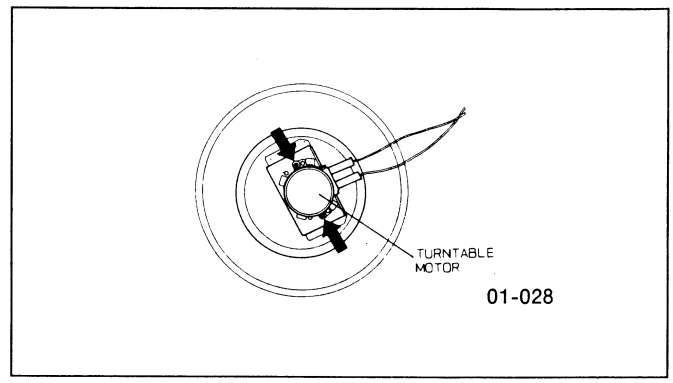
(B) Disconnect CN4 connector from digital programmer circuit board.

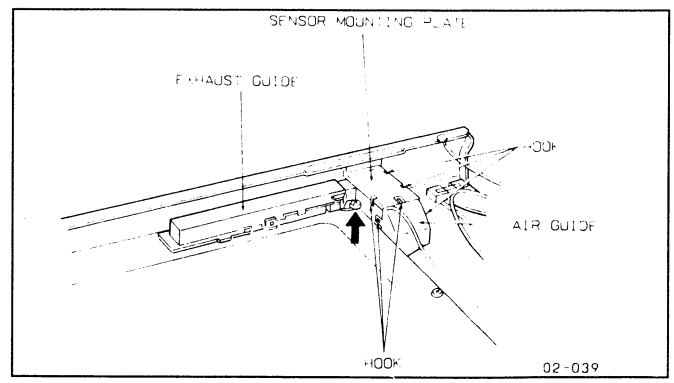
(C) Remove exhaust guide from steam sensor unit.

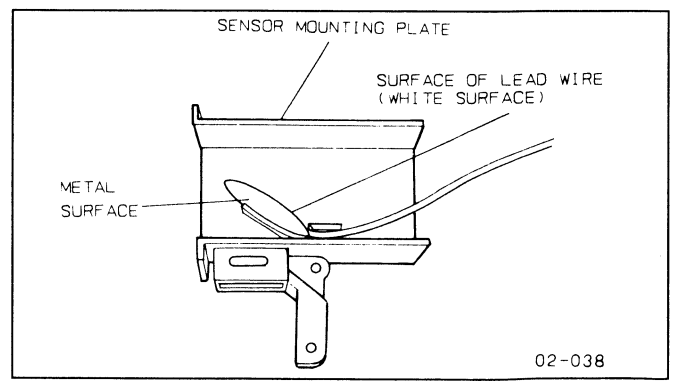
(D) Remove catch hooks on sensor mounting plate and air guide.

(E) Remove steam sensor from sensor mounting plate.

NOTE: When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure.







COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

1. High voltage transformer

(A) Remove connections from the transformer terminals and check continuity.
(B) Normal (cold) resistance readings should be as follows:
Secondary winding ····· Approx. 70Ω ~ 120Ω
Filament winding ····· Approx. 0Ω
Primary winding (0V ~ 240V) ····· Approx. 0Ω ~ 3Ω

2. High voltage capacitor

(A) Check continuity of capacitor with ohmmeter on highest OHM scale.
(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.
(C) A shorted capacitor will show continuous continuity.
(D) An open capacitor will show constant 9MΩ.
((Due to internal 9MΩ resistor))
(E) Resistance between each terminal and chassis should be infinite.

3. Diode

(A) Isolate the diode assembly from the circuit by disconnecting the leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩ in the other direction.

4. Protector diode

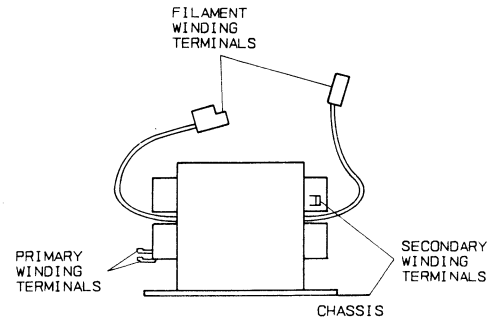
(A) Isolate the protector diode assembly from the circuit by disconnecting its leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the protector diode terminals.
Reverse the meter leads and again observe the resistance reading.
A normal protector diode's resistance will be infinite in both directions.
It is faulty if it shows continuity in one or both directions.

5. Magnetron

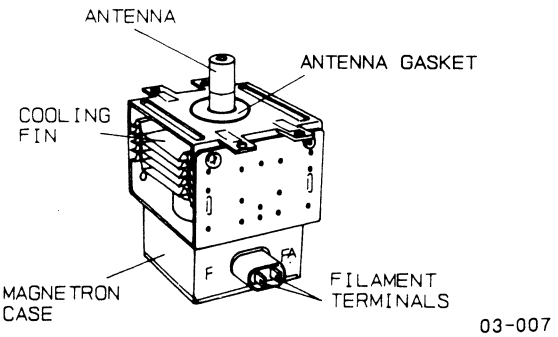
Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.

6. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by pressing an appropriate pad on the key board.
The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.



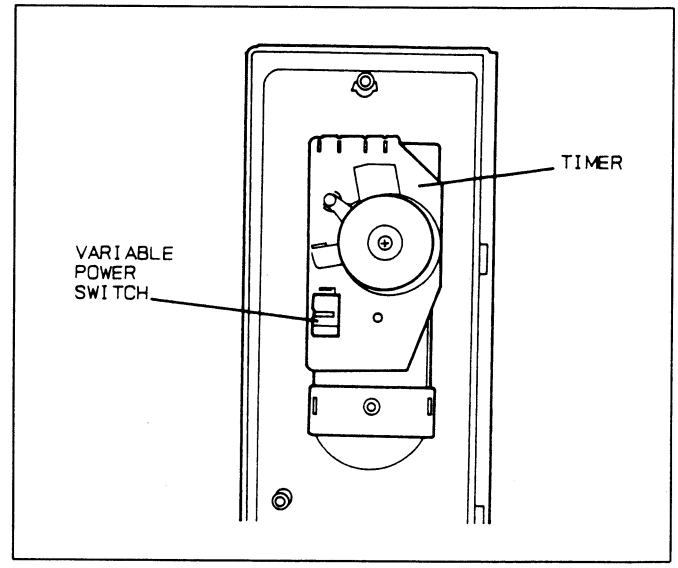
HIGH VOLTAGE TRANSFORMER



MAGNETRON

7. Variable power controller

(A) Isolate variable power switch from the circuit by disconnecting 2 leads.
(B) In order to check if variable power controller is operating normally, follow the test procedures below.
  (1) Select any power other than "High" and start the oven.
  (2) Check continuity between both terminals of the variable power switch.
  (3) Variable power controller (timer and variable power switch) is working properly if the ohm meter reads open and 0 ohm within 26.4 ± 2 seconds interval as shown in **Table** on page 9.



8. Steam Sensor and digital programmer circuit

CAUTION
Do not touch any parts of the circuitry on the digital programmer circuit since static electric discharge may damage this control panel.
Always ground yourself while working on this panel to discharge any static charge built up on your body.

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.
1) Place a water load (150 cc) in the oven.
2) Tap Auto Sensor Cook 1 pad.
  ※For UPG models: Tap Auto Sensor Cook 4 pad.
3) Tap Start Pad.
4) Steam Sensor detects steam about 1 minute 30 seconds to 5 minutes after the Start Pad is tapped.
5) T1 time cooking automatically switch to remaining time cooking. (T2)
6) The remaining of cooking time (T2) appears in display window. If the following cooking time appear Steam Sensor function is normal.

T1 TIME	T2 TIME (Remaining cooking time)
1 Min. 30 sec. ~ 5 Min.	9 Sec. ~ 30 Sec.

9. Temp sensor (Thermal protector)

A temp sensor is mounted or top of the oven cavity at the left side. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.
The thermal protector will operate at 257°F (125°C).
The device is connected to the DPC on touch control models. When the thermal protector exceeds its temperature it will turn off the power to oven cavity and display wil go to reset mode.
The cooking program can be reset after cool-down.
THERMISTOR RESISTANCE VALUE
30K-120K at 10°C-30°C (50°F-86°F)

MEASUREMENTS AND ADJUSTMENTS

1. Adjustment of Primary latch switch, Secondary latch switch and short switch

(A) When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.

NOTE: **No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.**

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in table so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

2. Measurement of microwave output

The power output of the magnetron can be determined by performing a simple water heating test as described below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

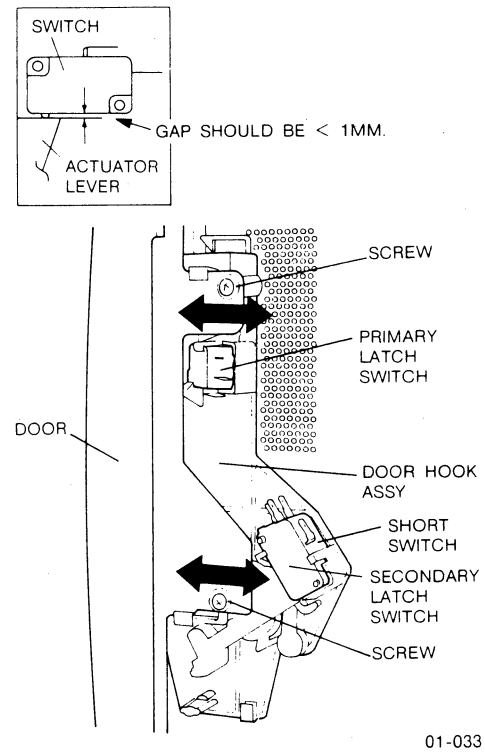
NOTE: **Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.**

(A) Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record each beaker's temperature (recorded as T1).

(B) Place the beaker on the center of glass cook plate.
Set the oven for High power and heat it for exactly one minute.

(C) Stir the water again and read the temperature of the beaker (recorded as T2).

(D) The normal temperature rise at High power position for each models is as shown in table.



Please confirm that the gap between the switch housing and switch actuator levers is no more than 1.0mm when the door is closed.

TABLE (1 ℓ -1min. test)

RATED OUTPUT	TEMPERATURE RISE
850W	Min. 14.4°F (8.0°C)

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
   When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be open or the connector cannot by removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. A 220V AC is present at the shaded area ▨ of the digital programmer circuit (Terminals of power relay B and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

[TROUBLE 1] Oven does not start cooking (Touch Control Models)

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
Oven is dead. No display at all	1	Fuse	Blown	→ TROUBLE 2
			Normal	→ STEP 2
	2	Thermal cutout	Faulty (open)	Thermal cutout ※ Check fan motor when thermal cutout is defective
			Normal	→ TROUBLE 4
Display lit but timer not starts count down	1	Secondary latch switch (Door closed 0 Ω Door opened ∞ Ω)	Faulty	Secondary latch switch
			Normal	→ TROUBLE 4
Timer starts count down but no microwave oscillation	1	Primary latch switch (Door closed 0 Ω Door opened ∞ Ω)	Faulty	Primary latch switch
			Normal	→ STEP 2
	2	High voltage transformer primary voltage	No voltage applied	→ STEP 3
			Power supply voltage applied	→ STEP 4
	3	Is 18 (12)V DC applied to power relay B?	No voltage applied	→ TROUBLE 4
			Voltage applied	Power relay B
	4	Check high voltage component according to component test procedure H.V.Transformer H.V.Capacitor H.V.Diode Magnetron	Faulty	Replace faulty H.V.Component

[TROUBLE 1] Oven does not start cooking (Mechanical Timer Model)

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
Oven is dead.	1	Fuse	Blown	→ TROUBLE 2
			Normal	→ STEP 2
	2	Thermal cutout	Faulty (open)	Thermal cutout ※Check fan motor when thermal cutout is defective.
			Normal	Timer
Oven lamp operates normally but fan motor does not rotate.	1	Primary latch switch	Abnormal	Primary latch switch
			Normal	Lead wire open
Oven lamp and fan motor operate normally but no microwave oscillation.	1	Secondary latch switch	Abnormal	Secondary latch switch
			Normal	→ STEP 2
	2	High voltage transformer primary voltage	No voltage applied	Variable power switch
			Power voltage applied	→ STEP 3
	3	Check high voltage Component according to Component test procedune H. V. Transformer H. V. Capacitor H.V. Diode Magnetron	Faulty	Replace faulty H. V. component

[TROUBLE 2] Fuse is blown

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
Main fuse blown	1	Primary latch switch (Door closed 0 Ω (Door opened ∞ Ω) and also power relay B (RY 2), when power relay B is located within monitor circuit.	Abnormal	Primary latch switch
			Normal	→ STEP 2
	2	Short switch (Door closed 0 Ω (Door opened ∞ Ω)	Abnormal	Short switch
			Normal	→ STEP 3
	3	H.V.Capacitor	Faulty	H.V.Capacitor
			Normal	→ STEP 4
	4	H.V.Diode	Faulty	H.V.Diode with protector diode (※NOTE)
			Normal	→ STEP 5
	5	Magnetron	Faulty	Magnetron with protector diode (※NOTE)
			Normal	→ STEP 6
	6	Protector diode	Faulty	Protector diode
			Normal	H.V.Transformer
	※NOTE: Be sure to replace protector diode together with those H.V.Components. In this case, only D2 of protector diode may be shorted due to faulty H.V.Component. Therefore, if protector diode is not replaced together, high voltage transformer will be damaged (over heated).			

[TROUBLE 3] Other troubles

CONDITIONS	POSSIBLE CAUSE	NOTE
Microwave output power is low. First of all, check if output power is really low by following "Measurement of microwave output".	1. Decrease in power source voltage. 2. Aging change of magnetron.	
Oven lamp and fan motor turn on when door is open.	1. Shorted contacts of Primary latch switch.	Touch Control Models
Oven lamp and fan motor turn on when power supply cord is plugged into wall receptacle.	1. Open Secondary latch switch. 2. Shorted contacts of power relay A. (RY1) 3. Defective digital programmer circuit. (See trouble 4)	Touch Control Models
Microwave oven does not operate normally, when auto sensor cooking is selected.	1. Defective steam sensor. 2. Defective DPC. (See trouble 4)	Sensor Models
"88:88" appears in display window after 10 seconds elapsed in the auto sensor cooking mode.	1. Open or loose wiring of sensor terminals from DPC. 2. Open steam sensor. 3. Defective DPC. (See trouble 4)	Sensor Models
Microwave oven does not operate and "88:88" appears in display.	1. Defective temp sensor. 2. Open grounding circuit. (NOTE) 3. Defective DPC.	Check tighten screws on escutcheon base bracket, D.P.C. board and temp sensor.

[TROUBLE 4] Trouble related to Digital programmer circuit (NN-5450B/5400B)

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in.	1	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 2
	2	IC-1 pin 37 voltage	Abnormal	ZD1,Q1
			Normal = 5V	→ Step 3
	3	IC-1 pin 23 voltage	Abnormal	IC-2
			Normal	→ Step 4
	4	IC-1 pin 29,30,31 voltage	Abnormal	R4,R5,R6
			Normal 3V,2V,1V	IC-1,CX1,LCD
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 26 waveform	Abnormal	IC-1
			Normal	→ Step 2
	2	Q2 transistor	Abnormal	Q2
			Normal	BZ1
Power relay A does not turn on even though the program has been set and the start pad is tapped.	1	IC-1 pin 16 voltage at operation	Abnormal	IC-1
			Normal 0V	→ Step 2
	2	Short circuit between pin 1 and 12 of IC-2	Still not turn on	RY-2
			Turns on now	IC-2, Q4
No microwave oscillation at any power setting	1	IC-1 pin 14 and 15 voltages	Abnormal	IC-1
			Normal 14---1.7V 15---0V	Q3
Dark or unclear display	1	Replace LCD and check operation	Normal	LCD
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	LCD

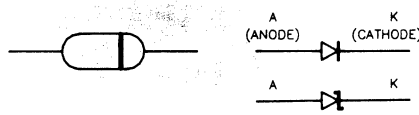
[TROUBLE 4] Trouble related to Digital programmer circuit (NN-5850B/5800B/5550B/5500B)

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in.	1	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 2
	2	IC-1 pin 37 voltage	Abnormal	ZD1,Q1
			Normal = 5V	→ Step 3
	3	IC-1 pin 23 voltage	Abnormal	IC-2
			Normal	→ Step 4
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No beep sound	1	IC-1 pin 25 voltage	Abnormal	IC-1
			Normal	BZ
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 3 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	short circuit between pin 1 and pin 12 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-2
No microwave oscillation at any power setting	1	IC-1 pin 6 and pin 14 voltages while operation at high power	Abnormal	IC-1
			Normal 6---5V, 14---5V	→ Step 2
	2	Q4 transistor	Abnormal	Q4
			Normal	IC-2, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
TO BE CONTINUED FOR AUTO SENSOR MODELS				
Auto Sensor cooking does not operate normally. (Steam sensor does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20kΩ/V), when breathe on metal surface of sensor	Abnormal = 0V	Steam sensor
			Normal ≧ 10~30mV	IC-1, IC-3, C7, C9

HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode

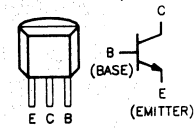


	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

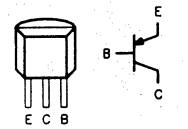
2SC·····
2SD·····



	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

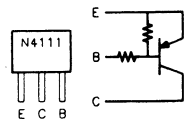
2SA·····
2SB·····



	FORWARD	REVERSE
E-B	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

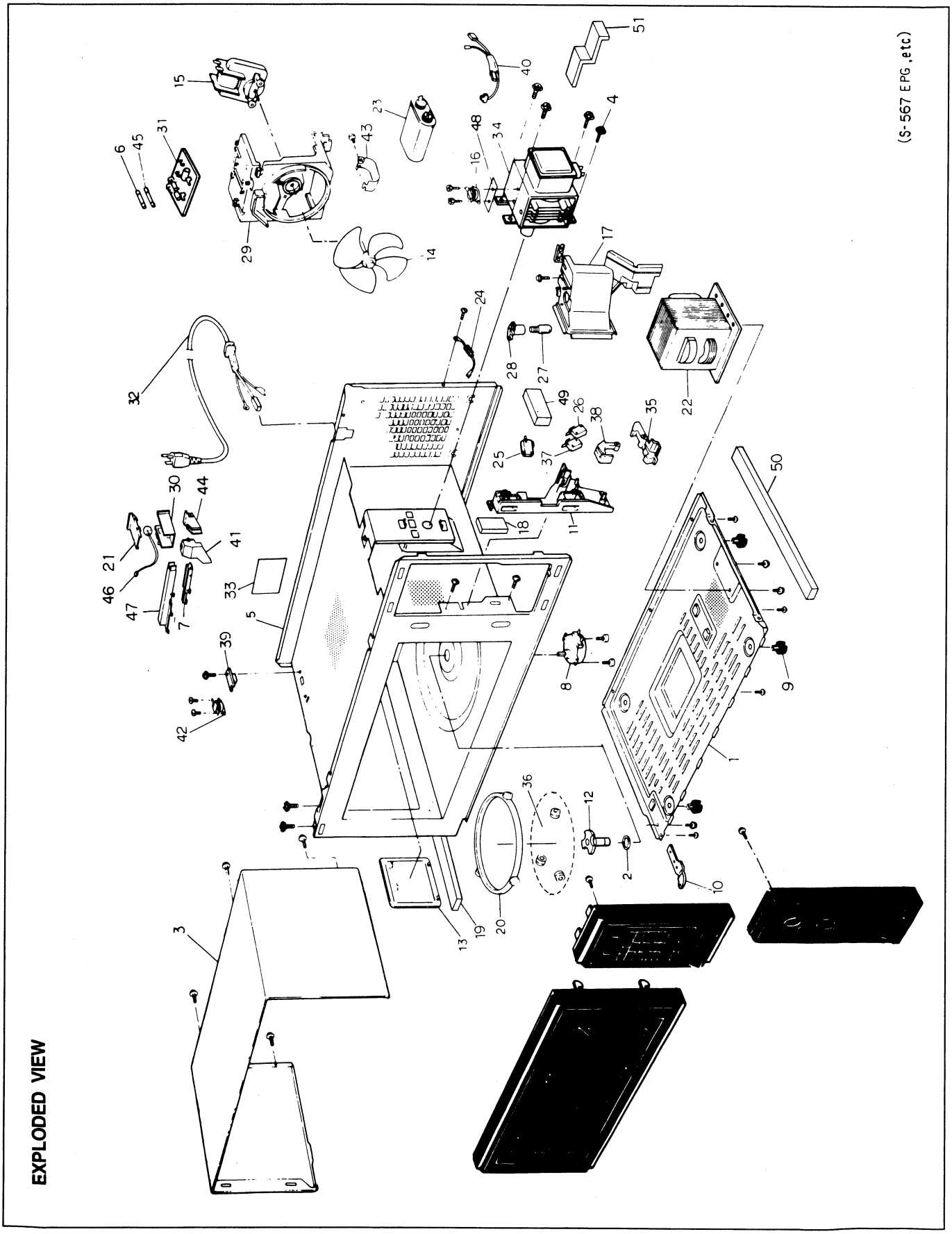
Digital Transistor

PNP Transistor

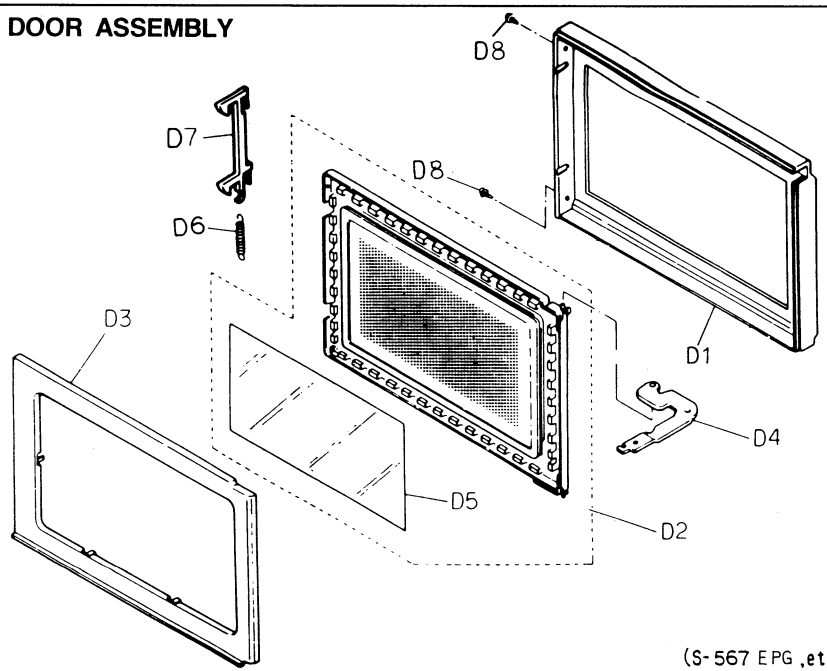


	FORWARD	REVERSE
E-B	10kΩ~30kΩ	10kΩ~30kΩ
C-B	50kΩ~90kΩ	∞
C-E	40kΩ~80kΩ	∞

EXPLODED VIEW AND PARTS LIST

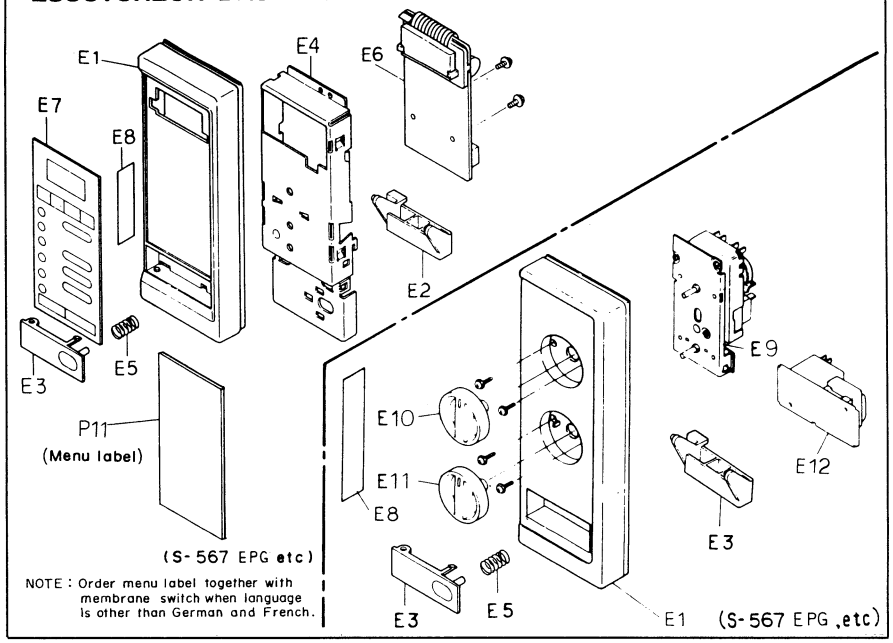


DOOR ASSEMBLY



(S-567 EPG ,etc)

ESCUTCHEON BASE ASSEMBLY

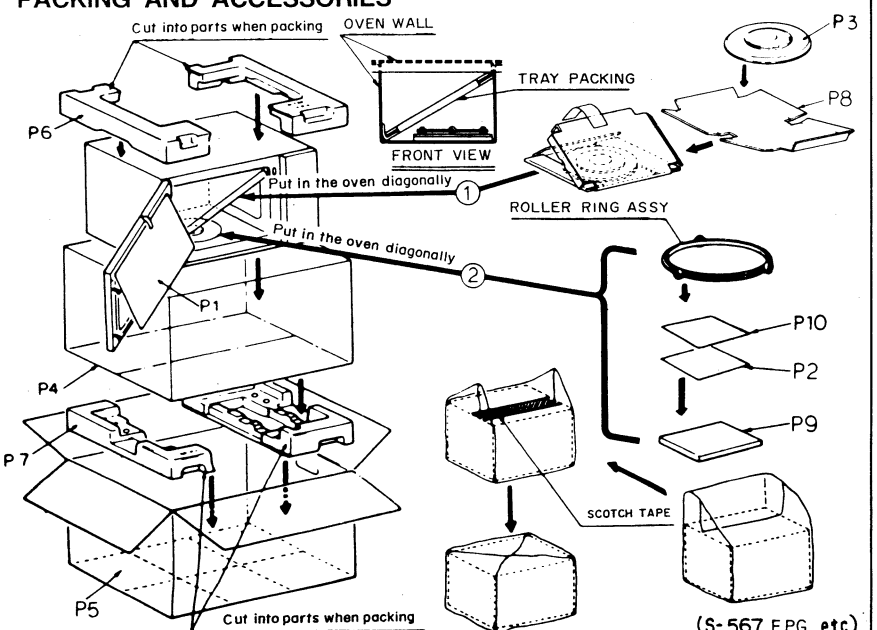


(S-567 EPG etc)

NOTE : Order menu label together with membrane switch when language is other than German and French.

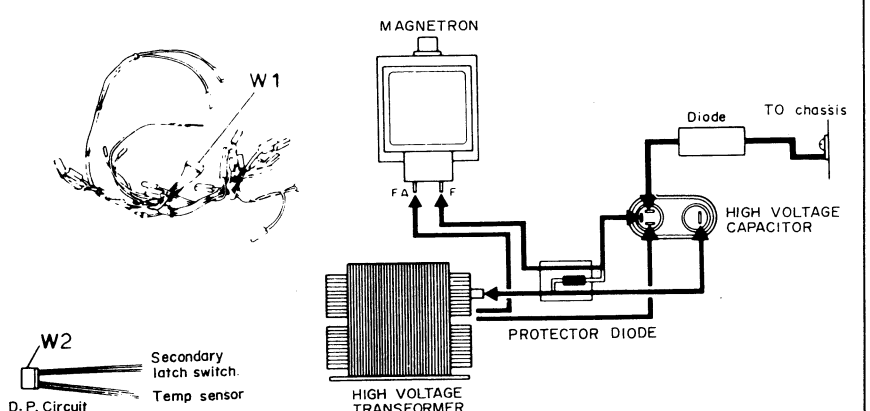
(S-567 EPG ,etc)

PACKING AND ACCESSORIES



(S-567 EPG ,etc)

WIRING MATERIAL



(S-567 EPG ,etc)

PARTS LIST

NOTE 1 : Part numbers are indicated on most mechanical parts. Please use these part numbers for parts orders.

2 : Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

3 : Alphabet marks in Remarks columns (i.e.EPG, etc) indicate parts applicable to only specfiied country models as follows.

EPG : For Continental Europe and Scandinavian Countries, UPG:For France, WPG : For Switzerland.

Parts without these marks can be used for all models.

4 : Items marked ※ are supplied by MELUK.

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
※ 1		E10014850BP	Base	1	
2		ANE2177-F80	Washer	1	
※ 3		E110D5750GP	Cabinet body assy	1	NN-5800B, NN-5500B, NN-5400B, NN-5200B
※ 3		E110D5750HGP	Cabinet body assy	1	NN-5850B, NN-5550B, NN-5450B, NN-5250B
4		XTWANE4+10RU	Tapping screw 4×10	4	For Magnetron
※ 5		E201A5750AP	Oven assy	1	NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B, NN-5200B, NN-5250B
6	⚠	ANE6230Z70BP	Fuse	1	(250V, 8A)
7		A65435540AP	Exhaust guide C	1	NN-5800B, NN-5850B
※ 8	⚠	E63264760JP	Turntable motor	1	AC, 3W, Single
9		ANE1008-3W0	Rubber foot	4	
※ 10		E30075540GP	Lower hinge	1	
11		A30204310AG	Door hook A	1	
12		A21315180AP	Pulley shaft	1	
※ 13		E20554000AP	Cover A	1	
14		ANE40086W0AP	Fan	1	
※ 15	⚠	E400A4760JP	Fan motor	1	AC, 26W, Single
16	⚠	A61454760JP	Thermal cutout	1	For Magnetron
※ 17		E40254760JP	Air guide A	1	
18		ANE0904000BD	Cushion rubber A	1	
19		ANE0928000BR	Cushion rubber A	1	
※ 20		E290D4830AP	Roller ring assy	1	
21		A22135540AP	Sensor bracket A	1	NN-5800B, NN-5850B
※ 22	⚠	E620A5750GP	H.V.Transformer	1	(1.5KVA)
23	⚠	A60904080GP	H.V.Capacitor	1	(1.14#F, AC2100V)
※ 24		E62024000AP	Diode	1	(Si, 0.35mA)
25	⚠	ANE61424LOAG	Micro switch	1	Primary/Secondary latch switch (16G3C26) NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B
25	⚠	ANE61422Q0BP	Micro switch	1	Primary/Secondary latch switch NN-5200B, NN-5250B
26	⚠	A61425180AP	Micro switch	1	Secondary latch switch (L-3C2-2) NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B
26	⚠	A61424050AP	Micro switch	1	Secondary latch switch (L-3C2-MR) NN-5200B, NN-5250B
27		A60304080BP	Incandescent lamp	1	(240V, 20W)
28	⚠	ANE6152110AG	Oven lamp socket	1	
※ 29		E41445540AP	Orifice	1	
30		A22145540AP	Sensor bracket B	1	NN-5800B, NN-5850B
※ 31		A692Y5540BP	Noise filter	1	
※ 32	⚠	E900C5540GP	AC cord W/plug	1	(220V) NN-5800B EPG/UPG, NN-5850B EPG/UPG, NN-5550B UPG
※ 32	⚠	E900C5540WP	AC cord W/plug	1	NN-5800B WPG, NN-5850B WPG, NN-5500B WPG, NN-5550B WPG, NN-5400B WPG, NN-5200B WPG, NN-5250B WPG
※ 32	⚠	E900C5540EP	AC cord W/plug	1	NN-5500B EPG/UPG, NN-5550B EPG, NN-5400B EPG/UPG, NN-5450B, NN-5200B EPG/UPG, NN-5250B EPG
※ 33		AEE00062Q0EP	Warning label	1	
34	⚠	2M210-M1CP	Magnetron	1	NN-5800B, NN-5850B, NN-5500B UPG/WPG, NN-5550B UPG/WPG, NN-5200B UPG/WPG, NN-5250B WPG
34		2M210-M1C	Magnetron	1	NN-5500B EPG, NN-5550B EPG, NN-5400B, NN-5450B, NN-5200B EPG, NN-5250B EPG
※ 35		E31374650AP	Hook spacer B	1	
36		A202K4650AP	Roller B assy	1	NOTE 5
37	⚠	ANE6161-3X0	Micro switch	1	NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B Short switch (V-16G-1C25)
37	⚠	ANE61782Q0GP	Micro switch	1	NN-5200B, NN-5250B Short switch (L-2C2-MR)
38		A31384650AP	Hook spacer C	1	
39	⚠	A601L4000AP	Temp sensor	1	Thermal protector NN-5800B, NN-5850B
※ 40	⚠	E606V4760JP	Protector diode	1	(Si)
41		A40265540AP	Air guide B	1	NN-5800B, NN-5850B
42	⚠	A61454050AP	Thermal cutout	1	For Oven NN-5200B, NN-5250B
※ 43		E60374760GP	Capacitor bracket	1	
44		A40315540AP	Air guide C	1	NN-5800B, NN-5850B
45	⚠	ANE6595Q50GS	Fuse B	1	(1.25A)
46		A607S5500AP	Steam sensor	1	NN-5800B, NN-5850B
47		A64505540AP	Exhaust guide B	1	NN-5800B, NN-5850B
48		A62384310AG	Spacer	1	
※ 49		E41024760JP	Air guide cushion A	1	
50		ANE000Z000AA	Cushion rubber	1	
51		ANE0902000DJ	Cushion rubber	1	
		ANE0887L10AP	Cavity spray paint	1	Spray can, For repair of painted oven cavity
		ANE0887970AP	Touch-up paint	1	Bottle with brush, For repair of painted oven cavity

DOOR ASSEMBLY

※ D1		E302A5670GP	Door A assy	1	NN-5800B
※ D1		E302A5670HGP	Door A assy	1	NN-5850B
※ D1		E302A5750GP	Door A assy	1	NN-5500B,NN-5400B
※ D1		E302A5750HGP	Door A assy	1	NN-5550B,NN-5450B,NN-5250B
※ D1		E302A5780GP	Door A assy	1	NN-5200B
D2		A302K5690AP	Door E assy	1	NN-5800B, NN-5500B, NN-5400B
D2		A302K5690HCP	Door E assy	1	NN-5850B, NN-5550B, NN-5450B, NN-5250B EPG/UPG
D2		A302K5690HCQ	Door E assy	1	NN-5250B WPG
※ D3		E30855690AP	Door C	1	NN-5800B, NN-5400B, NN-5200B
※ D3		E30855690HCP	Door C	1	NN-5850B, NN-5550B, NN-5450B, NN-5250B
※ D4		E300B5540AP	Upper hinge	1	
※ D5		E31455690AP	Door screen A	1	

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Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
D6		A30214000AP	Door key spring	1	
※ D7		E30184310AG	Door key A	1	
D8		XTBANE3+8BZ	Tapping screw 3×8	2	NN-5800B, NN-5500B, NN-5540B, NN-5200B
D8		XTBANE3+8BC	Tapping screw 3×8	2	NN-5850B, NN-5550B, NN-5450B, NN-5250B
ESCUTCHEON BASE ASSEMBLY					
E1		A80345540GP	Escutcheon base	1	NN-5800B, NN-5500B, NN-5400B NOTE 6
E1		A80345540HAQ	Escutcheon base	1	NN-5850B, NN-5550B, NN-5450B NOTE 6
E1		A80345780BP	Escutcheon base	1	NN-5200B NOTE 6
E1		A80345780HGP	Escutcheon base	1	NN-5250B NOTE 6
E2		A82565540AP	Door opening lever	1	
E3		A80725540GP	Door opening button	1	NN-5800B, NN-5500B, NN-5400B
E3		A80725540HAQ	Door opening button	1	NN-5850B, NN-5550B, NN-5450B, NN-5250B
E3		A80725660GP	Door opening button	1	NN-5200B
E4		A81275690AP	Bracket	1	NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B
E5		ANE80378AOAG	Spring	1	
E6	⚠	A603L5670GP	D.P.Circuit assy	1	(W/Component) NN-5800B EPG/WPG, NN-5850B EPG/WPG
E6	⚠	A603L5670UP	D.P.Circuit assy	1	(W/Component) NN-5800B UPG, NN-5850B UPG
E6	⚠	A603L5750EP	D.P.Circuit assy	1	(W/Component) NN-5500B EPG/WPG, NN-5550B EPG/WPG
E6	⚠	A603L5750UP	D.P.Circuit assy	1	(W/Component) NN-5500B UPG, NN-5550B UPG
E6	⚠	A603L5700GP	D.P.Circuit assy	1	(W/Component) NN-5400B EPG/WPG, NN-5450B EPG/WPG
E6	⚠	A603L5700UP	D.P.Circuit assy	1	(W/Component) NN-5400B UPG, NN-5450B UPG
E7	⚠	A64795540EP	Membrane switch	1	NN-5800B EPG/WPG
E7	⚠	A64795670UP	Membrane switch	1	NN-5800B UPG
E7	⚠	A64795540HUP	Membrane switch	1	NN-5850B EPG/WPG
E7	⚠	A64795670HUP	Membrane switch	1	NN-5850B UPG
E7	⚠	A64795630EP	Membrane switch	1	NN-5500B EPG/WPG
E7	⚠	A64795750UP	Membrane switch	1	NN-5500B UPG
E7	⚠	A64795630HEP	Membrane switch	1	NN-5550B EPG/WPG
E7	⚠	A64795750HUP	Membrane switch	1	NN-5550B UPG
E7	⚠	A64795580EP	Membrane switch	1	NN-5400B EPG/WPG
E7	⚠	A64795580UP	Membrane switch	1	NN-5400B UPG
E7	⚠	A64795580HEP	Membrane switch	1	NN-5450B EPG/WPG
E7	⚠	A64795580HUP	Membrane switch	1	NN-5450B UPG
※ E8		E00075670EP	Name plate	1	NN-5800B EPG
※ E8		E00075670UP	Name plate	1	NN-5800B UPG
※ E8		E00075670WP	Name plate	1	NN-5800B WPG
※ E8		E00075670HEP	Name plate	1	NN-5850B EPG
※ E8		E00075670HUP	Name plate	1	NN-5850B UPG
※ E8		E00075670HWP	Name plate	1	NN-5850B WPG
※ E8		E00075750EP	Name plate	1	NN-55000 EPG
※ E8		E00075750UP	Name plate	1	NN-5500B UPG
※ E8		E00075750WP	Name plate	1	NN-5500B WPG
※ E8		E00075750HEP	Name plate	1	NN-5550B EPG
※ E8		E00075750HUP	Name plate	1	NN-5550B UPG
※ E8		E00075750HWP	Name plate	1	NN-5550B WPG
※ E8		E00075700EP	Name plate	1	NN-5400B EPG
※ E8		E00075700UP	Name plate	1	NN-5400B UPG
※ E8		E00075700WP	Name plate	1	NN-5400B WPG
※ E8		E00075700HEP	Name plate	1	NN-5450B EPG
※ E8		E00075700HUP	Name plate	1	NN-5450B UPG
※ E8		E00075700HWP	Name plate	1	NN-5450B WPG
※ E8		E00075780EP	Name plate	1	NN-5200B EPG
※ E8		E00075780UP	Name plate	1	NN-5200B UPG
※ E8		E00075780WP	Name plate	1	NN-5200B WPG
※ E8		E00075780HEP	Name plate	1	NN-5250B EPG
※ E8		E00075780HUP	Name plate	1	NN-5250B UPG
※ E8		E00075780HWP	Name plate	1	NN-5250B WPG
E9	⚠	A60014120BP	Timer switch	1	NN-5200B, NN-5250B
E10,11		A800D4050BP	Timer knob	2	NN-5200B
E10,11		ANE800D9A0GH	Timer knob	2	NN-5250B
E12		A606X4050GP	Inrush reducing circuit	1	NN-5200B, NN-5250B
PACKING AND ACCESSORIES					
※ P1		AEE01072Q0BP	Door sheet	1	
※ P2		E00035540EP	Instruction book	1	NN-5800B EPG/WPG, NN-5850B EPG/WPG
※ P2		E00035630EP	Instruction book	1	NN-5500B EPG/WPG, NN-5550B EPG/WPG, NN-5400B EPG/WPG, NN-5450B EPG/WPG, NN-5200B EPG/WPG, NN-5250B EPG/WPG
※ P2		E00035670UP	Instruction book	1	NN-5800B UPG, NN-5850B UPG
※ P2		E00035750UP	Instruction book	1	NN-5500B UPG, NN-5550B UPG, NN-5400B UPG, NN-5450B UPG, NN-5200B UPG, NN-5250B UPG
※ P3		E06015690AP	Glass cooking tray	1	
※ P4		AEE01066Q0BP	Vinyl cover	1	
※ P5		E01025670GP	Packing case, paper	1	NN-5800B
※ P5		E01025670HGP	Packing case, paper	1	NN-5850B
※ P5		E01025750GP	Packing case, paper	1	NN-5500B
※ P5		E01025750HGP	Packing case, paper	1	NN-5550B
※ P5		E01025700GP	Packing case, paper	1	NN-5400B
※ P5		E01025700HGP	Packing case, paper	1	NN-5450B
※ P5		E01025780GP	Packing case, paper	1	NN-5200B
※ P5		E01025780HGP	Packing case, paper	1	NN-5250B
※ P6		E01044130AP	Upper filler	1	
※ P7		E01054130AP	Lower filler	1	
※ P8		E01085750GP	Tray packing	1	
※ P9		E000B5540EP	Cook book	1	NN-5500B EPG
※ P9		E000B5540UP	Cook book	1	UPG
※ P9		E000B5540GP	Cook book	1	NN-5800B WPG
※ P10		AEE0169Q50GN	Servicenter list	1	
※ P11		E03345540PZ	Menu label	1	NN-5800B EPG/WPG (Portuguese)
※ P11		E03345540SZ	Menu label	1	NN-5800B EPG/WPG (Spanish)
※ P11		E03345540HZ	Menu label	1	NN-5800B EPG/WPG (Dutch)
※ P11		E03345540FZ	Menu label	1	NN-5800B EPG/WPG (French)
※ P11		E03345540EZ	Menu label	1	NN-5800B EPG/WPG (Italian)
※ P11		E03345540DZ	Menu label	1	NN-5800B EPG/WPG (Danish)
※ P11		E03345540NZ	Menu label	1	NN-5800B EPG/WPG (Norwegian)
※ P11		E03345540KZ	Menu label	1	NN-5800B EPG/WPG (Finnish)
※ P11		E03345540WZ	Menu label	1	NN-5800B EPG/WPG (Swedish)
※ P11		E03345540HPZ	Menu label	1	NN-5850B EPG/WPG (Portuguese)
※ P11		E03345540HSZ	Menu label	1	NN-5850B EPG/WPG (Spanish)
※ P11		E03345540HHZ	Menu label	1	NN-5850B EPG/WPG (Dutch)
※ P11		E03345540HFZ	Menu label	1	NN-5850B EPG/WPG (French)
※ P11		E03345540HEZ	Menu label	1	NN-5850B EPG/WPG (Italian)
※ P11		E03345540HDZ	Menu label	1	NN-5850B EPG/WPG (Danish)
※ P11		E03345540HNZ	Menu label	1	NN-5850B EPG/WPG (Norwegian)
※ P11		E03345540HKZ	Menu label	1	NN-5850B EPG/WPG (Finnish)
※ P11		E03345540HWZ	Menu label	1	NN-5850B EPG/WPG (Swedish)
※ P11		E03345630PZ	Menu label	1	NN-5500B EPG/WPG (Portuguese)
※ P11		E03345630SZ	Menu label	1	NN-5500B EPG/WPG (Spanish)
※ P11		E03345630HZ	Menu label	1	NN-5500B EPG/WPG (Dutch)
※ P11		E03345630FZ	Menu label	1	NN-5500B EPG/WPG (French)
※ P11		E03345630EZ	Menu label	1	NN-5500B EPG/WPG (Italian)
※ P11		E03345630DZ	Menu label	1	NN-5500B EPG/WPG (Danish)
※ P11		E03345630NZ	Menu label	1	NN-5500B EPG/WPG (Norwegian)

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Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
※ P11		E03345630KZ	Menu label	1	NN-5500B EPG/WPG (Finnish)
※ P11		E03345630WZ	Menu label	1	NN-5500B EPG/WPG (Swedish)
※ P11		E03345630HPZ	Menu label	1	NN-5550B EPG/WPG (Portuguese)
※ P11		E03345630HSZ	Menu label	1	NN-5550B EPG/WPG (Spanish)
※ P11		E03345630HHZ	Menu label	1	NN-5550B EPG/WPG (Dutch)
※ P11		E03345630HFZ	Menu label	1	NN-5550B EPG/WPG (French)
※ P11		E03345630HEZ	Menu label	1	NN-5550B EPG/WPG (Italian)
※ P11		E03345630HDZ	Menu label	1	NN-5550B EPG/WPG (Danish)
※ P11		E03345630HNZ	Menu label	1	NN-5550B EPG/WPG (Norwegian)
※ P11		E03345630HKZ	Menu label	1	NN-5550B EPG/WPG (Finnish)
※ P11		E03345630HWZ	Menu label	1	NN-5550B EPG/WPG (Swedish)
※ P11		E03345580PZ	Menu label	1	NN-5400B EPG (Portuguese)
※ P11		E03345580SZ	Menu label	1	NN-5400B EPG (Spanish)
※ P11		E03345580HZ	Menu label	1	NN-5400B EPG (Dutch)
※ P11		E03345580FZ	Menu label	1	NN-5400B EPG (French)
※ P11		E03345580EZ	Menu label	1	NN-5400B EPG (Italian)
※ P11		E03345580DZ	Menu label	1	NN-5400B EPG (Danish)
※ P11		E03345580NZ	Menu label	1	NN-5400B EPG (Norwegian)
※ P11		E03345580KZ	Menu label	1	NN-5400B EPG (Finnish)
※ P11		E03345580WZ	Menu label	1	NN-5400B EPG (Swedish)
※ P11		E03345580HPZ	Menu label	1	NN-5450B EPG (Portuguese)
※ P11		E03345580HSZ	Menu label	1	NN-5450B EPG (Spanish)
※ P11		E03345580HHZ	Menu label	1	NN-5450B EPG (Dutch)
※ P11		E03345580HFZ	Menu label	1	NN-5450B EPG (French)
※ P11		E03345580HEZ	Menu label	1	NN-5450B EPG (Italian)
※ P11		E03345580HDZ	Menu label	1	NN-5450B EPG (Danish)
※ P11		E03345580HNZ	Menu label	1	NN-5450B EPG (Norwegian)
※ P11		E03345580HKZ	Menu label	1	NN-5450B EPG (Finnish)
※ P11		E03345580HWZ	Menu label	1	NN-5450B EPG (Swedish)
WIRING MATERIAL					
※ W1		E030A5750GP	Lead wire harness	1	NN-5800B, NN-5850B, NN-5500B, NN-5550B, NN-5400B, NN-5450B
※ W1		E030A5780GP	Lead wire harness	1	NN-5200B, NN-5250B
※ W2		E03535750GP	Lead wire	1	NN-5800B, NN-5850B, NN-5500B, NN-5550B
※ W2		E030F5700GP	Lead wire harness	1	NN-5400B, NN-5450B
REF.NO.31 NOISE FILTER					
C1		ECQU2A104MN	Polyester capacitor	1	0.1μF, ±20%, 250V
C2, 3	⚠	ECKDNS472MEX	Ceramic capacitor	2	0.0047μF, ±20%, 250V (Single layer)
CN1		AEEMMA00703W	3 pin connector	1	
ZNR1		ERZC10DK621F	Varistor	1	
ZNR2, 3		ERZC10DK112A	Varistor	2	
L1, 2		A621A5540GP	Filter coil	1	
		ANE6231Q50GN	Fuse holder	2	
		ANE6231H60RN	Fuse holder	2	
R1		ERF10ZXJ240	Inrush resistor	1	(24Ω, 10W)
		ERD25FJ564S	Carbon resistor	1	560kΩ, ±5%, 1/4W
REF.NO.E12 INRUSH REDUCING CIRCUIT (NN-5200B, NN-5250B)					
RY1	⚠	AEG5WA1ER18A	Power relay	1	(G5W-A) (18V)
T1	⚠	A62494050GP	L.V.Transformer	1	(1.8VA) (ETP35K147E)
CN1		AEEMMA00503W	3 pin connector	1	

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
C1		ECEA1VU221E	Electrolytic capacitor	1	220μF, -10%+30%, 35V
D1		AEDNERB1202U	Diode	1	(Si)
R1		ERD25VJ470	Carbon resistor	1	47Ω, ±5%, 1/4W

NOTE 5: The roller B assy contains three rollers.
When replacing the roller B, make sure all three rollers be replaced together for smooth glass cooking tray turning.
6 : Please order name plate together.

DIGITAL PROGRAMMER CIRCUIT (NN-5400B, NN-5450B)

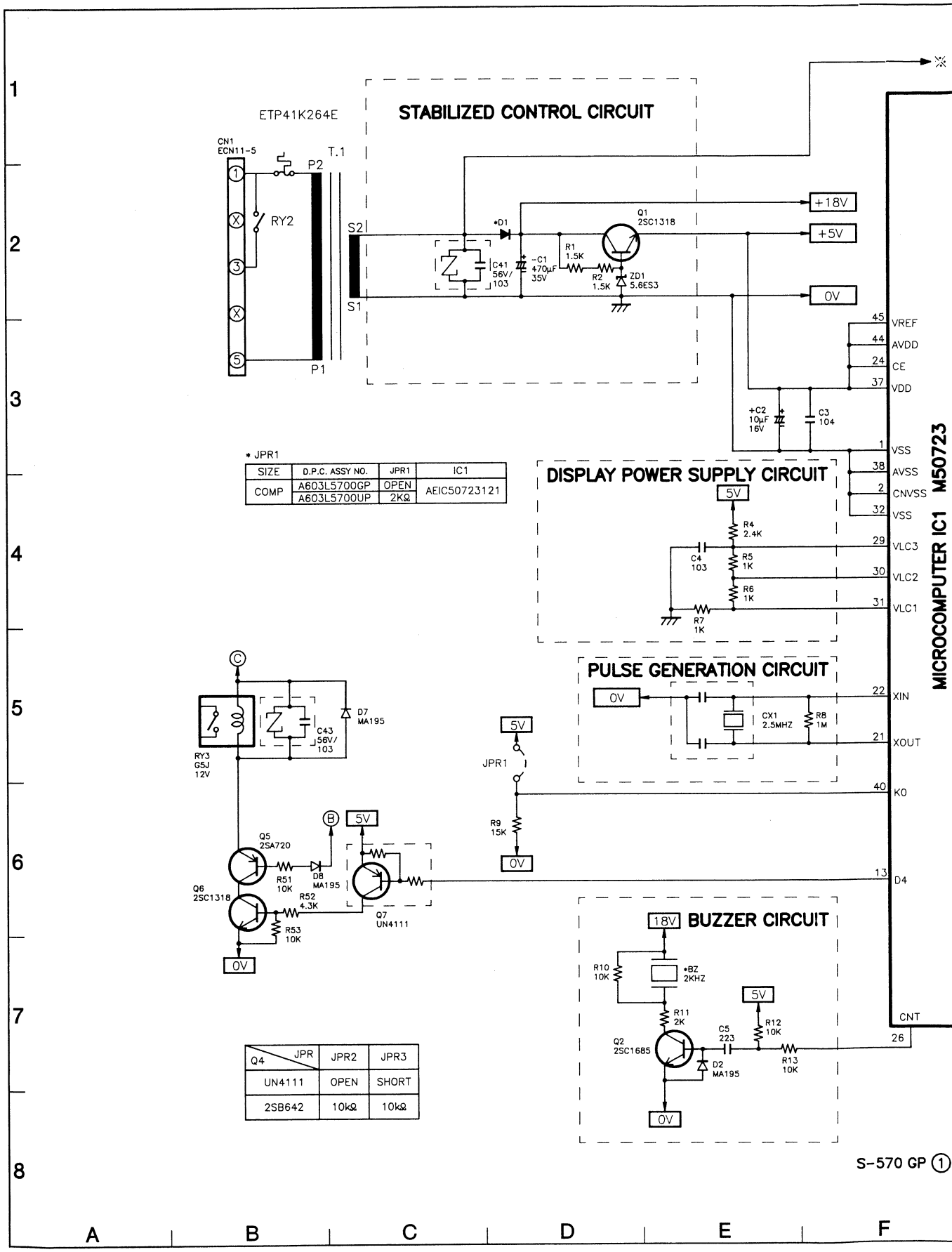
PARTS LIST

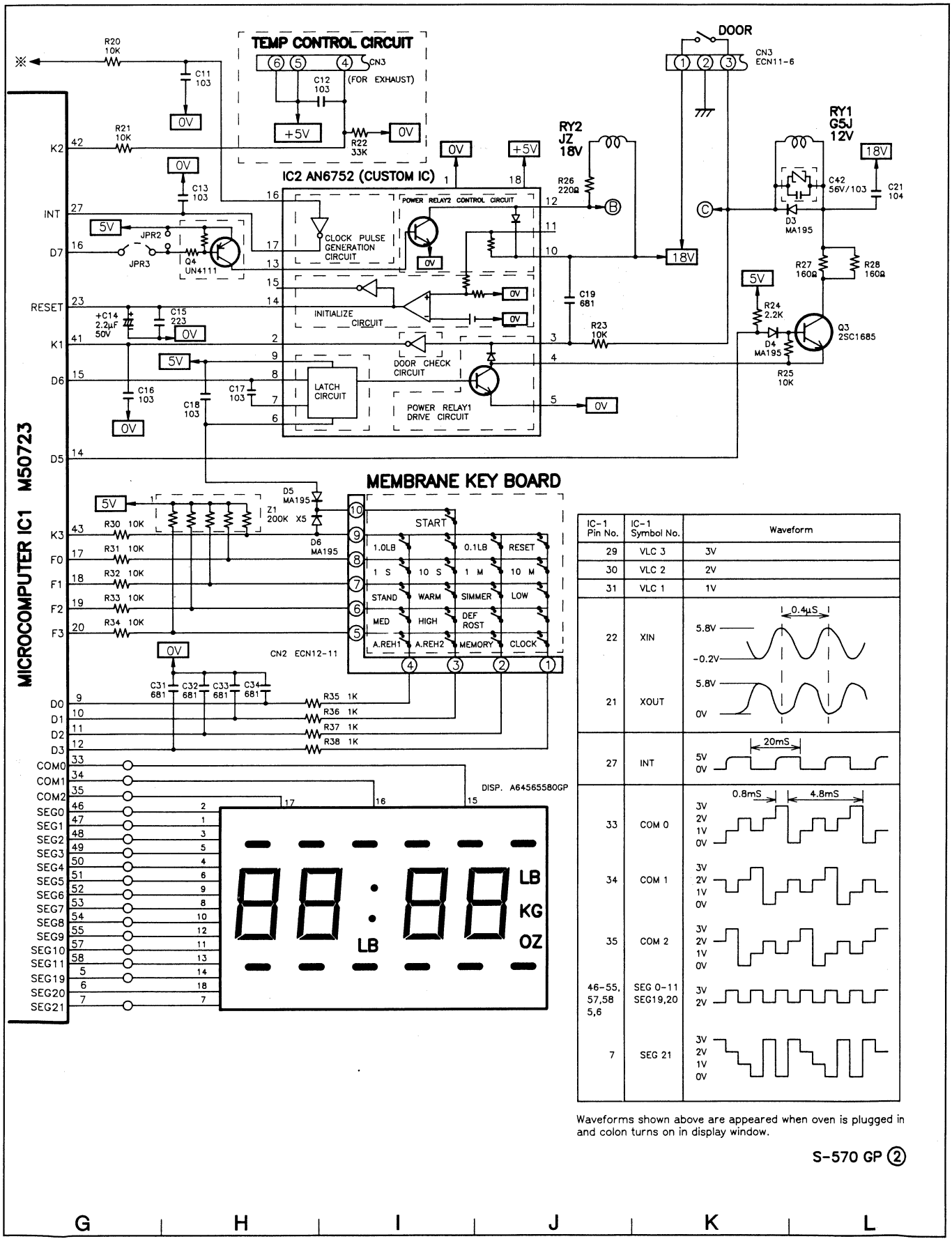
Ref. No.	Part No.	Description	Pcs/ Set	Remarks
DISP	A64565580GP	Liquid crystal display	1	
SPACER	A82845580GP	Spacer cushion	1	For DISP
T1	A62494720GP	L.V.Transformer	1	(2.2VA)
CN1	AEEMMA01505W	5 pin connector	1	
CN2	AEEM11FDZBTM	11 pin connector	1	
CN3	AEEMMC03F06W	6 pin connector	1	
BZ	AEFB22EP2002	Buzzer	1	2.0kHz
CX1	AEFFT2R50GWT	Ceramic resonator	1	2.5MHz
RY1,3	AEG5J1EG12A	Power relay	2	(12V)
RY2	AEAWJZDC18A	Power relay	1	(18V)
C41,42,43	EZCDB6R560M	Varistor	3	
IC1	AEIC50723121	L.S.I. (MOS Microprocessor IC)	1	
IC2	AN6752	I.C. (Bipolar linear IC)	1	
Q1,6	2SC1318-R	Transistor, Si 400mW	2	(200MHz)
Q2,3	2SC1685-R	Transistor, Si 250mW	2	(150MHz)
Q4,7	UN4111-(TA)	Transistor, Si 300mW	2	
Q5	2SA720-RTA	Transistor, Si 400mW	1	(200MHz)
D1	AEDNERA1502	Diode, Si	1	(0.1A)
D2,3,4,5, 6,7,8	MA195-(TA)	Diode, Si	7	(0.1A)
ZD1	AEDZ5R6ES3T1	Zener diode, Si	1	(0.1A)
C1	ECEA1VU471E	Electrolytic capacitor, Al	1	470μF, ±20%, 35V
C2	ECEA1CU100B	Electrolytic capacitor, Al	1	10μF, ±20%, 16V
C3,21	AECF050F104Z	Ceramic capacitor	2	(Multi layer) 0.1μF, −20%+80%, 50V
C4,,11,12, 13,16,17,18	ECBT1E103ZF5	Ceramic capacitor	7	(Single layer) 0.01 μF, − 20% + 80%, 25V
C5,15	ECBT1E223ZF5	Ceramic capacitor	2	(Single layer) 0.022 μF, − 20% + 80%, 25V
C14	ECEA1HU2R2B	Electrolytic capacitor, Al	1	2.2μF, ±20%, 50V
C19,31,32, 33,34	ECBT1H681KB5	Ceramic capacitor	5	(Single layer) 680pF, ±10%, 50V
R1,2	ERDS2TJ152T	Carbon film resistor	2	1.5kΩ, ±5%, 1/4W
R4	ERDS2TJ242T	Carbon film resistor	1	2.4kΩ, ±5%, 1/4W
R5,6,7,35, 36,37,38	ERDS2TJ102T	Carbon film resistor	7	1kΩ, ±5%, 1/4W

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
R8	ERDS2TJ105T	Carbon film resistor	1	1MΩ, ±5%, 1/4W
R9	ERDS2TJ153T	Carbon film resistor	1	15kΩ, ±5%, 1/4W
R10,12,13, 20,21,23,25, 30,31,32,33, 34,51,53	ERDS2TJ103T	Carbon film resistor	14	10kΩ, ±5%, 1/4W
R11	ERDS2TJ202T	Carbon film resistor	1	2kΩ, ±5%, 1/4W
R22	ERDS2TJ333T	Carbon film resistor	1	33kΩ, ±5%, 1/4W
R24	ERDS2TJ222T	Carbon film resistor	1	2.2kΩ, ±5%, 1/4W
R26	ERDS2TJ221T	Carbon film resistor	1	220Ω, ±5%, 1/4W
R27,28	ERDS2TJ161T	Carbon film resistor	2	160Ω, ±5%, 1/4W
R52	ERDS2TJ432T	Carbon film resistor	1	4.3kΩ, ±5%, 1/4W
JPR1	ERD25VJ1R0T	Carbon film resistor	1	1Ω, ±5%, 1/4W
Z1	EXBP85204J	Compound resistor	1	200k Ω X 5, ± 5%, 1/8W

DIGITAL PROGRAMMER CIRCUIT (NN-5400B, NN-5450B)

SCHEMATIC DIAGRAM





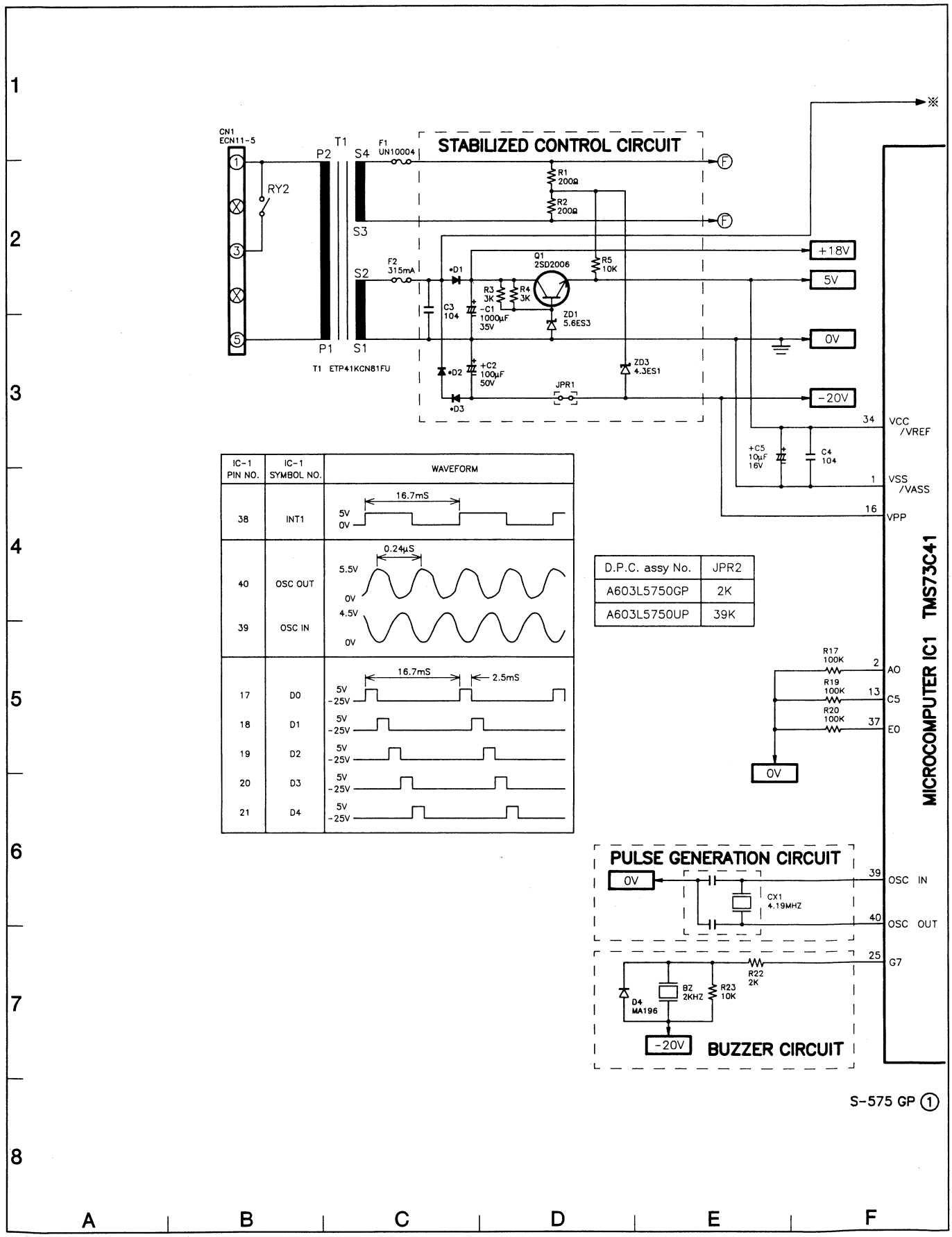
IC-1 Pin No.	IC-1 Symbol No.	Waveform
29	VLC 3	3V
30	VLC 2	2V
31	VLC 1	1V
22	XIN	0.4μS, 5.8V, -0.2V
21	XOUT	5.8V, 0V
27	INT	20mS, 5V, 0V
33	COM 0	0.8mS, 4.8mS, 3V, 2V, 1V, 0V
34	COM 1	3V, 2V, 1V, 0V
35	COM 2	3V, 2V, 1V, 0V
46-55, 57,58 5,6	SEG 0-11 SEG19,20	3V, 2V
7	SEG 21	3V, 2V, 1V, 0V

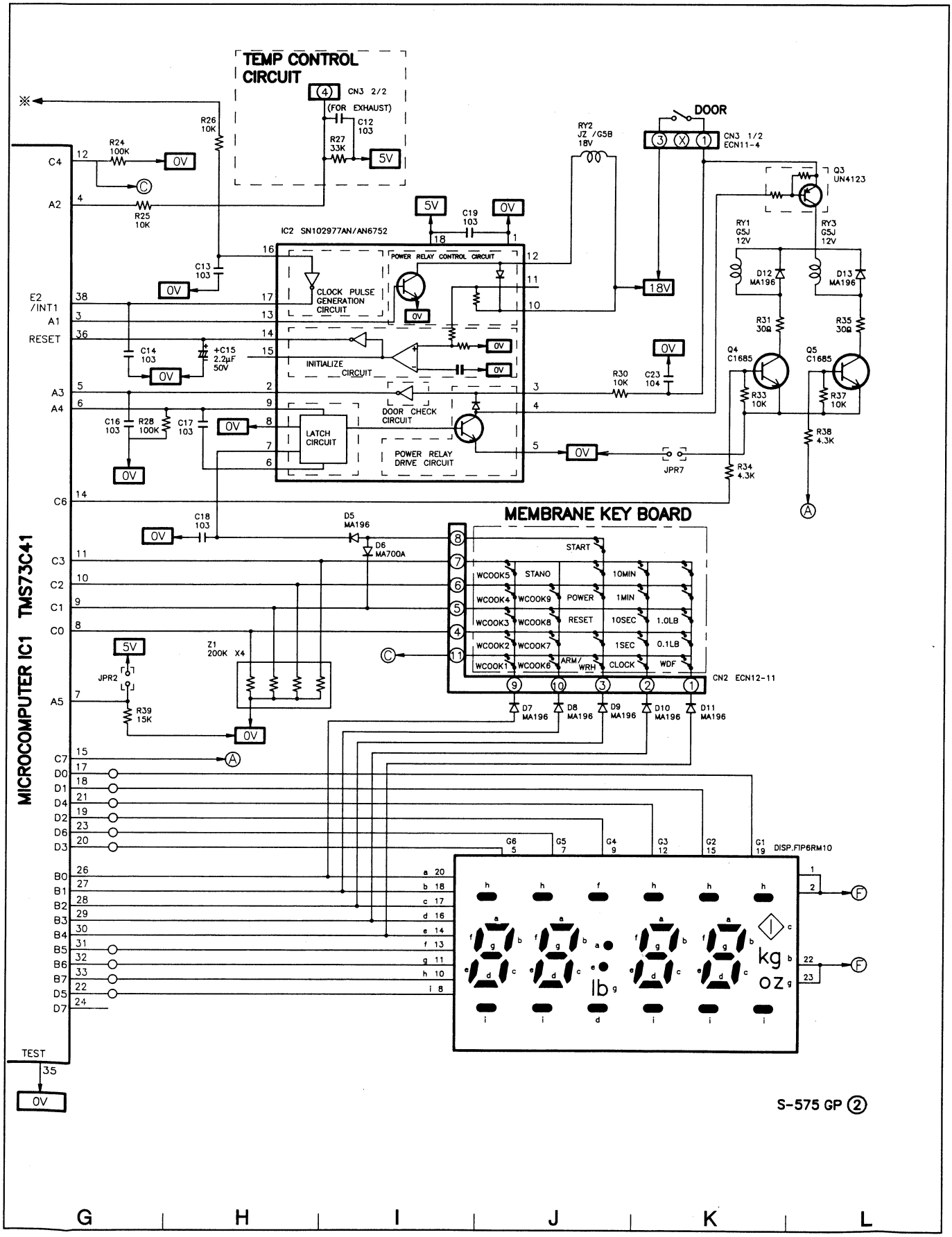
Waveforms shown above are appeared when oven is plugged in and colon turns on in display window.

S-570 GP ②

DIGITAL PROGRAMMER CIRCUIT (NN-5500B, NN-5550B)

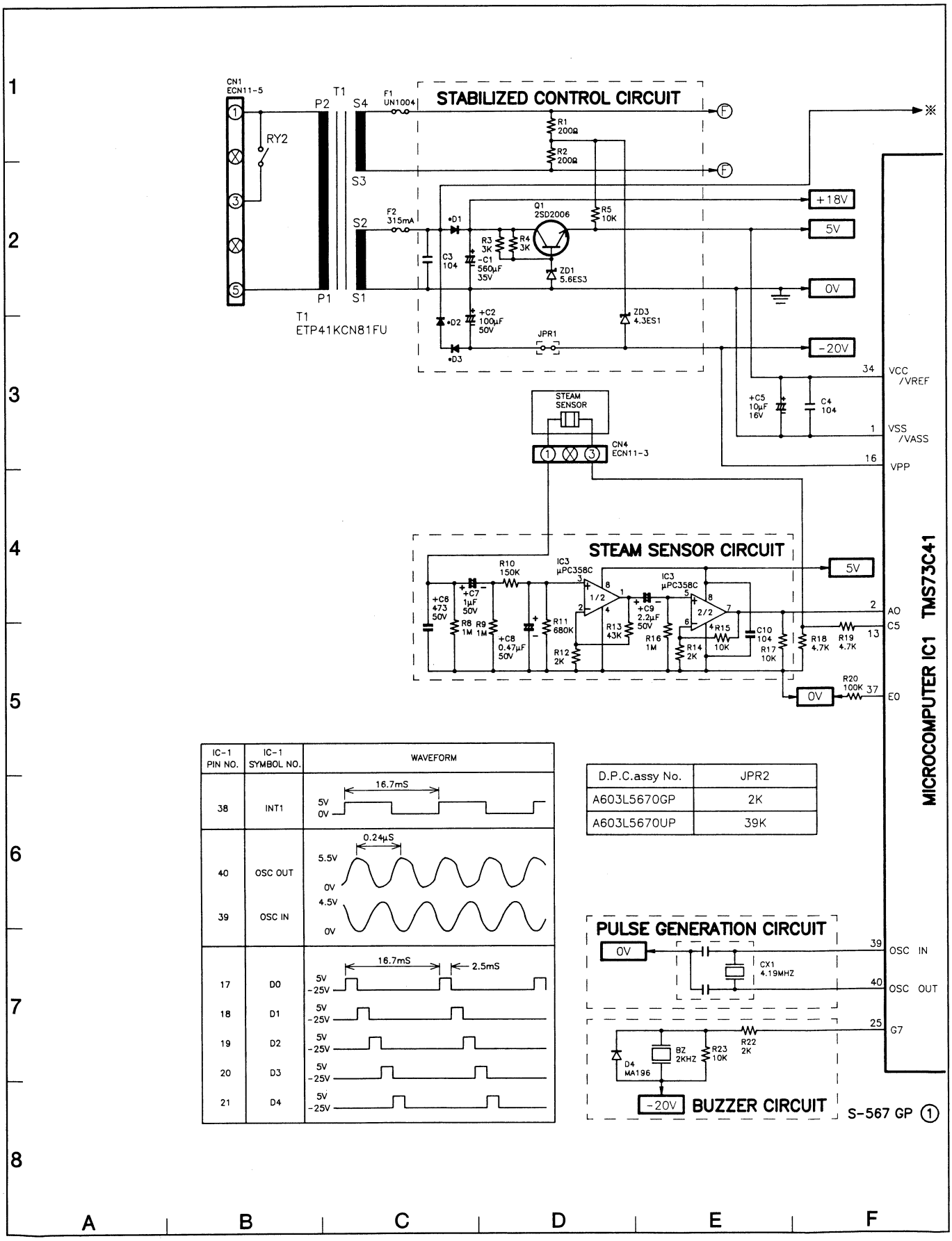
SCHEMATIC DIAGRAM




TEMP CONTROL CIRCUIT
CN3 2/2
(FOR EXHAUST)
C12 103
R26 10K
R27 33K
R24 100K
R25 10K
DOOR
CN3 1/2 ECN11-4
RY2 JZ /G5B 18V
Q3 UN4123
RY1 G5J 12V
RY3 G5J 12V
D12 MA196
D13 MA196
IC2 SN102977AN/AN6752
C19 103
C13 103
POWER RELAY CONTROL CIRCUIT
CLOCK PULSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
C14 103
+C15 2.2µF 50V
C16 103
R28 100K
C17 103
C18 103
R30 10K
C23 104
R31 30Ω
R35 30Ω
Q4 C1685
Q5 C1685
R33 10K
R37 10K
R38 4.3K
R34 4.3K
JPR7
D5 MA196
D6 MA700A
MEMBRANE KEY BOARD
START
STANO
POWER
RESET
ARM/
WRH
CLOCK
WDF
10MIN
1MIN
10SEC
1.0LB
1SEC
0.1LB
WCOOK5
WCOOK4
WCOOK3
WCOOK2
WCOOK1
WCOOK9
WCOOK8
WCOOK7
WCOOK6
CN2 ECN12-11
D7 MA196
D8 MA196
D9 MA196
D10 MA196
D11 MA196
Z1 200K X4
JPR2
R39 15K
MICROCOMPUTER IC1 TMS73C41
DISP.FIP6RM10
kg
oz
lb
TEST
5V
0V
18V
S-575 GP ②

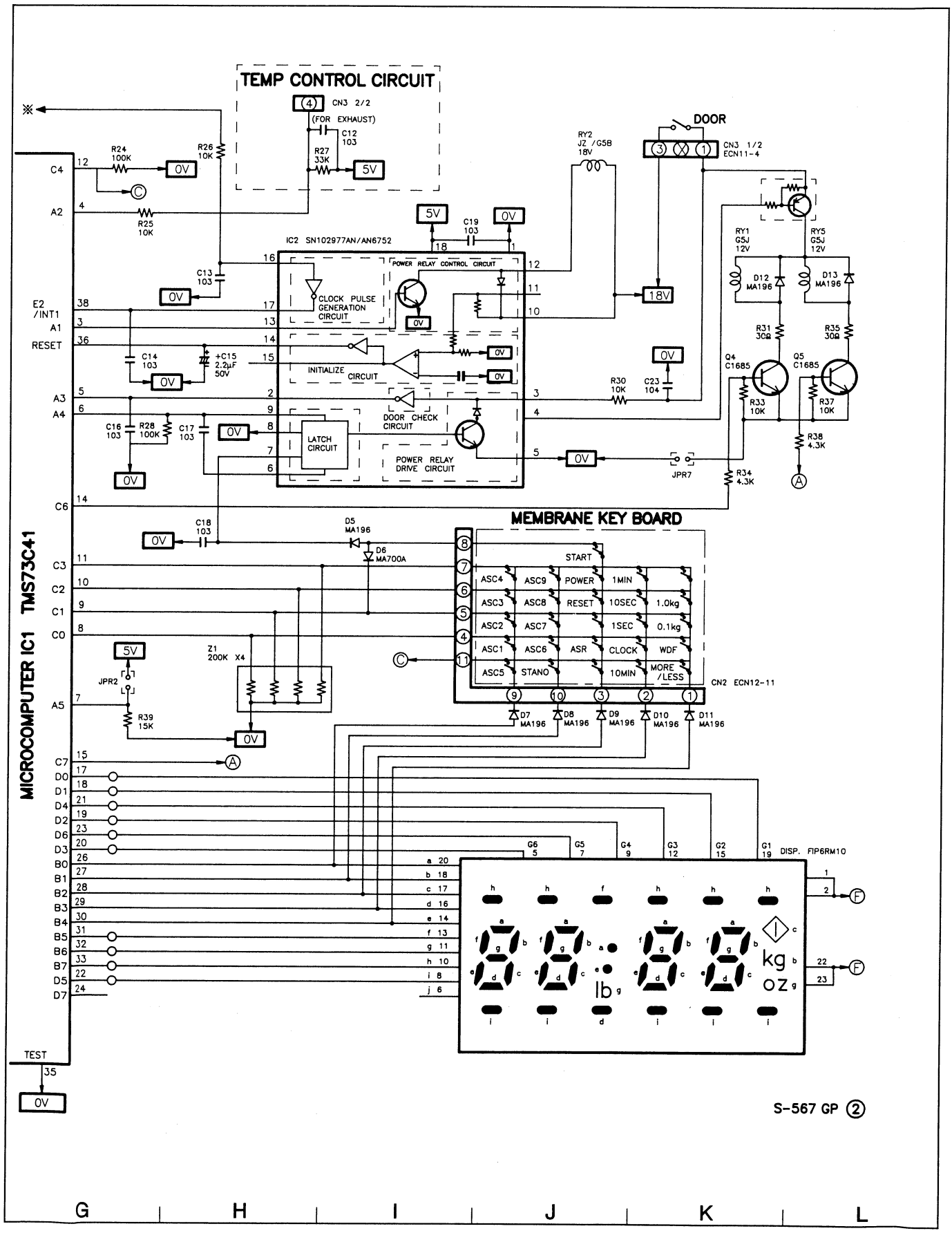
DIGITAL PROGRAMMER CIRCUIT (NN-5800B, NN-5850B)

SCHEMATIC DIAGRAM



IC-1 PIN NO.	IC-1 SYMBOL NO.	WAVEFORM
38	INT1	16.7mS, 5V, 0V
40	OSC OUT	0.24μS, 5.5V, 0V
39	OSC IN	4.5V, 0V
17	D0	16.7mS, 2.5mS, 5V, -25V
18	D1	5V, -25V
19	D2	5V, -25V
20	D3	5V, -25V
21	D4	5V, -25V

D.P.C.assy No.	JPR2
A603L5670GP	2K
A603L5670UP	39K


TEMP CONTROL CIRCUIT
CN3 2/2
(FOR EXHAUST)
C12 103
R27 33K
5V
R24 100K
R26 10K
R25 10K
0V
DOOR
CN3 1/2
ECN11-4
RY2 JZ /G5B 18V
18V
IC2 SN102977AN/AN6752
POWER RELAY CONTROL CIRCUIT
CLOCK PULSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
C19 103
C13 103
C14 103
+C15 2.2µF 50V
C16 103
R28 100K
C17 103
C18 103
R30 10K
C23 104
RY1 G5J 12V
RY5 G5J 12V
D12 MA196
D13 MA196
R31 30Ω
R35 30Ω
Q4 C1685
Q5 C1685
R33 10K
R37 10K
R38 4.3K
R34 4.3K
JPR7
D5 MA196
D6 MA700A
MEMBRANE KEY BOARD
START
ASC4
ASC9
POWER
1MIN
ASC3
ASC8
RESET
10SEC
1.0kg
ASC2
ASC7
1SEC
0.1kg
ASC1
ASC6
ASR
CLOCK
WDF
ASC5
STANO
10MIN
MORE /LESS
CN2 ECN12-11
D7 MA196
D8 MA196
D9 MA196
D10 MA196
D11 MA196
Z1 200K X4
JPR2
R39 15K
MICROCOMPUTER IC1 TMS73C41
RESET
TEST
DISP. FIP6RM10
kg
oz
lb
S-567 GP ②

DIGITAL PROGRAMMER CIRCUIT (NN-5500B, NN-5550B, NN-5800B, NN-5850B)

PARTS LIST

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
DISP	A64565540GP	Fluorecent tube	1	
SPACER	A82845540GP	Spacer cushion	1	For DISP
T1	A62495670BP	Low Voltage Transformer	1	4.6VA ETP41KCN81FU
CN1	AEEMMA01505W	5 pin connector	1	
CN2	AEEM11FDZBTM	11 pin connector	1	
CN3	AEEMMC00D04W	4 pin connector	1	
CN4	AEEMMC00703W	3 pin connector	1	
BZ	AEFB22EP2002	Buzzer	1	2kHz
CX1	AEFFT4R19GW	Ceramic Resonator	1	4.19MHz
RY1,3	AEG5J1EG12B	Power Relay	2	(12V)
RY2	AEBG5B18P-1	Power Relay	1	(18V)
ZNR	ERZC10DK471F	ZNR	1	
IC1	AEICC4176777	L.S.I. (MOS Microprocessor IC)	(1)	NN-5800B/5850B
	AEICC4176768	L.S.I. (MOS Microprocessor IC)	(1)	NN-5500B/5550B
IC2	AN6752	I.C. (Bipolar Linear IC)	1	
IC3	AEICUPC358C	I.C.	1	NN-5800B/5850B
Q1	2SD2006-R	Transistor, Si 1.2W	1	100MHz
Q3	UN4123	Transistor, Si 300mW	1	
Q4,5	2SC1685-R	Transistor, Si 250mW	2	150MHz
D1,2,3	AEDNERA1502	Diode, Si	3	(0.1A)
D4,5,7, 8,9,10, 11,12,13	MA196	Diode, Si	9	(0.1A)
D6	MA700A	Diode, Si	1	(0.03A)
ZD1	AEDZ5R6ES3T1	Zener Diode, Si	1	RD5.6ES3
ZD3	AEDZ4R3ES1T1	Zener Diode, Si	1	RD4.3ES1
C1	ECEA1VU102E	Electrolytic capacitor, Al	1	1000 μF, −10%+30%, 35V
C2	ECEA1HU101B	Electrolytic capacitor, Al	1	100μF, −10%+30%, 50V
C3,4,10, 23	AECF50F104Z	Ceramic capacitor (Single layer)	4	NN-5800B/5850B 0.1μF, −10%+80%, 50V
C3,4,23	AECF50F104Z	Ceramic capacitor (Single layer)	4	NN-5500B/5550B 0.1μF, −10%+80%, 50V
C5	ECEA1CU100B	Electrolytic capacitor, Al	1	10μF, −10%+30%, 16V
C6	ECKR1H473ZF	Ceramic capacitor (Single layer)	1	NN-5800B/5850B 0.047 μF, −20%+80%, 50V
C7	ECEA1HU010B	Electrolytic capacitor, Al	1	1.0μF, −10%+30%, 50V NN-5800B/5850B
C8	ECEA1HUR47B	Electrolytic capacitor, Al	1	0.47μF, −10%+30%,50V NN-5800B/5850B
C9,15	ECEA1HKA2R2B	Electrolytic capacitor, Al	2	2.2μF, −10%+30%,50V NN-5800B/5850B
C12,13,14, 16,17,18, 19	ECBT1E103ZF5	Ceramic capacitor (Single layer)	7	0.01μF, −20%+80%, 25V
C15	ECEA1HU2R2B	Electrolytic capacitor, Al	1	2.2μF, −10%+30%,50V NN-5500B/5550B
R1,2	ERDS2TJ201T	Carbon film resistor	2	200kΩ, ±5%, 1/4W
R3,4	ERDS2TJ302T	Carbon film resistor	2	3.0kΩ, ±5%, 1/4W
R5,15,17, 23,25,26, 30,33,37	ERDS2TJ103T	Carbon film resistor	9	10kΩ, ±5%,1/4W NN-5800B/5850B
R5,23,25, 26,30,33	ERDS2TJ103T	Carbon film resistor	6	10kΩ, ±5%,1/4W NN-5500B/5550B
R8,9,16	ERDS2TJ153T	Carbon film resistor	3	15kΩ, ±5%,1/4W NN-5800B/5850B
R10	ERDS2TJ154T	Carbon film resistor	1	150kΩ, ±5%,1/4W NN-5800B/5850B
R11	ERDS2TJ684T	Carbon film resistor	1	680kΩ, ±5%,1/4W NN-5800B/5850B
R12,14,22	ERDS2TJ202T	Carbon film resistor	3	2kΩ, ±5%,1/4W NN-5800B/5850B
R13	ERDS2TJ433T	Carbon film resistor	1	43kΩ, ±5%,1/4W NN-5800B/5850B
R17,19,20, 28,38	ERDS2TJ104T	Carbon film resistor	5	100kΩ, ±5%,1/4W NN-5400B/5450B
R18,19	ERDS2TJ472T	Carbon film resistor	2	4.7kΩ, ±5%,1/4W NN-5800B/5850B
R20,28	ERDS2TJ104T	Carbon film resistor	3	100kΩ, ±5%,1/4W NN-5800B/5850B
R22	ERDS2TJ202T	Carbon film resistor	1	2kΩ, ±5%,1/4W NN-5400B/5450B
R24	ERDS2TJ204T	Carbon film resistor	1	200kΩ, ±5%, 1/4W
R27	ERDS2TJ333T	Carbon film resistor	1	33kΩ, ±5%, 1/4W
R29,31,32	ERDS2TJ161T	Carbon film resistor	3	160Ω, ±5%, 1/4W NN-5800B/5850B
R31,35	ERDS2TJ300T	Carbon film resistor	2	30Ω, ±5%, 1/4W
R34,38	ERDS2TJ432T	Carbon film resistor	2	4.3kΩ, ±5%, 1/4W
R39	ERDS2TJ153T	Carbon film resistor	1	15kΩ, ±5%, 1/4W
Z1	AEXBM4X204JT	Compound resistor	1	200k Ω × 4, ± 5%, 1/8W
F1	UN10004	Transistor	1	
F2	ANE604K7J0BP	Week point element	1	
JPR2	ERD25VJ202T	Carbon film resistor	1	2kΩ, ±5%, 1/4W

SERVICE FIXTURES AND TOOLS

EXTENSION CABLES

NOTE: To be used when repairing the DPC board assembly directly on the oven for easy access of the board.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	AT40M003	3 pin Extension Cable	1	Cable No. 36 (NN-5800B/5850B)
	AT40M004	4 pin Extension Cable	1	Cable No. 16 (NN-5800B/5850B/ 5500B/5550B)
	AT40M005	5 pin Extension Cable	1	Cable No. 17
	AT40M006	6 pin Extension Cable	1	Cable No. 18 (NN-5400B/5450B)
	AT40E006	1 pin×6 Extension Cable	1	Cable No. 9

DPC COMMON CHECKER AND ITS CABLE

NOTE: To be used only when DPC common checker is available.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	ANE600ZK70GP	DPC. Common Checker	1	
	AT30A4780GP	DPC. Checker Cable	1	(NN-5400B/5450B)
	AT30A5670GP	DPC. Checker Cable	1	(NN-5800B/5850B/ 5500B/5550B)